Complete facts about the conventions . . . the exhibition . . . AREA committee meetings

stressed concrete trestle

p.

lway TRACK and

September 1959

STRUCTURES

What's wrong with the picture?

New idea adds zest to safety

p. 43

A Simmons-Boardman TIME-SAVER Publication

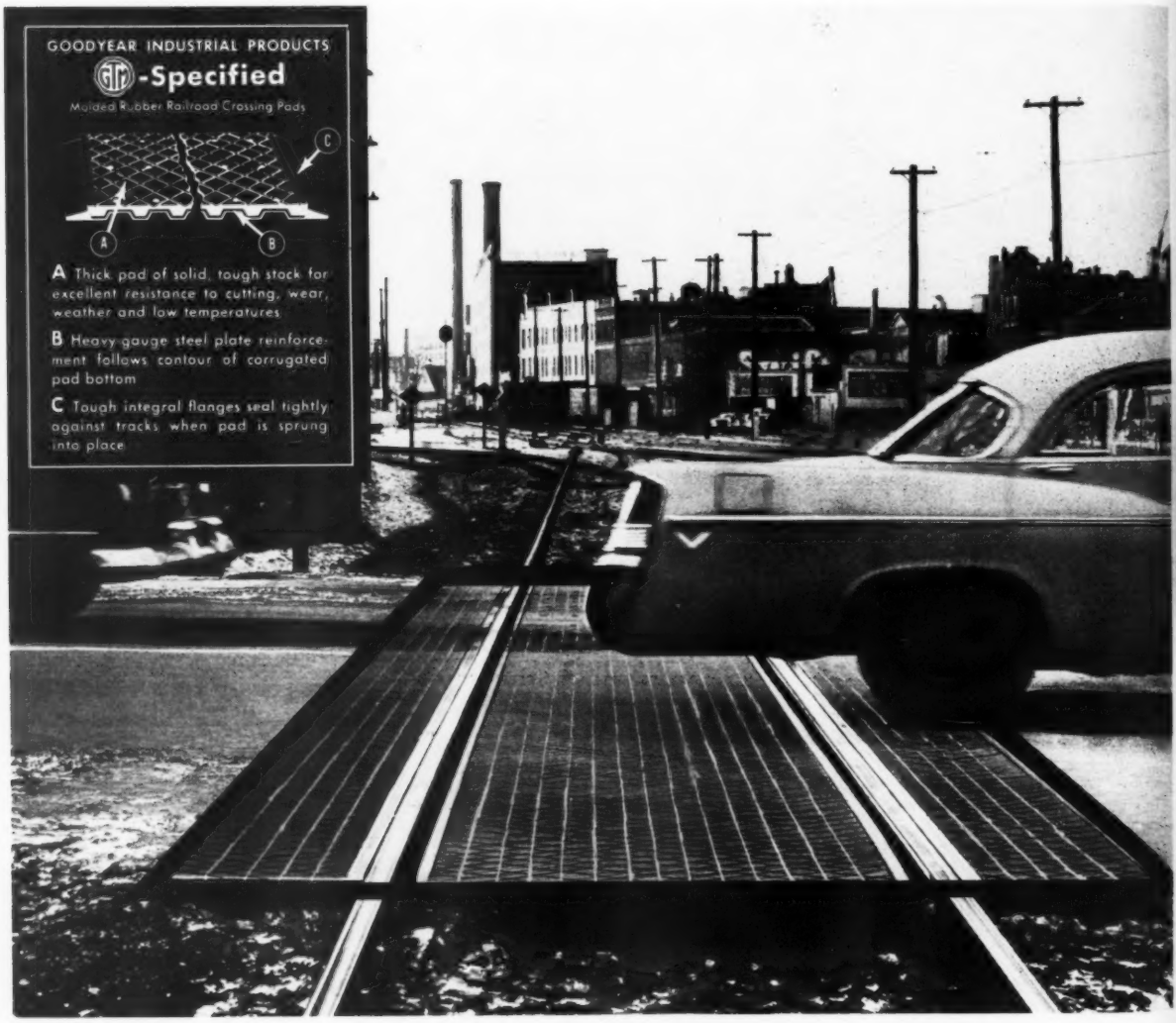
10 million cars, 10 thousand trains and still no maintenance

Curbing the high maintenance costs of this bustling crossing was a headache to a major Northeastern railroad. For these tracks take a double-barreled pounding —from traffic feeding into a nearby thruway as well as the daily flood of cars in and out of the nearby factory parking lot.

Then the G.T.M.—Goodyear Technical Man—suggested a rubber railroad crossing—developed for just such tough service. The installation was made in September 1956.

Already a proved money saver, these steel-reinforced rubber pads continue to rewrite the book on RR maintenance. There's absolutely no sign of punishment from the estimated 10 million cars and 10,000 trains that have crossed them. *Yet no one's done any work on the railroad here in better than 2 years—there's no maintenance need even remotely in sight.*

If you're looking for real economies like these in the care of rail crossings—highway or interplant—why not try the G.T.M.? For details, write Goodyear, Industrial Products Division, St. Marys, Ohio, Los Angeles 54, California, or Akron 16, Ohio.


GOODYEAR INDUSTRIAL PRODUCTS
GT -Specified
Molded Rubber Railroad Crossing Pads
C
A
B
A Thick pad of solid, tough stock for excellent resistance to cutting, wear, weather and low temperatures
B Heavy-gauge steel plate reinforcement follows contour of corrugated pad bottom
C Tough integral flanges seal tightly against tracks when pad is sprung into place

RUBBER RAILROAD CROSSINGS BY

GOODYEAR

THE GREATEST NAME IN RUBBER

Two . . . three . . . four times longer track life with Bethlehem heat-treated rails

Pick a point in your system where you've been noticing short rail life (our engineers will be glad to help) and install several test lengths of Bethlehem heat-treated rail. Keep comparative checks on the rails throughout the test.

If the results follow those of other railroads, you will find your heat-treated rails outlasting standard control-cooled rails by two, three, even four to one. A road serving the Pocahontas coal field observed that low-side, heat-treated rails in one 12-deg curve have already stood up 6½ times longer than untreated rails, and are still in service.

Bethlehem will be glad to furnish detailed information on specific tests of heat-treated rails on some of the country's leading railroads. In many of these cases, actual contour tracings as well as metallurgical reports are available for discussion. Just get in touch with the nearest Bethlehem office, or write to the address below.

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- Tamping Equipment
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- Wire Brush Machines

Railway TRACK and STRUCTURES

SEPTEMBER

1959 • Vol. 55, No. 9

September is convention month 37
Three pages of useful information about the meetings and the manufacturers' exhibit to be held at Chicago during the week of September 14.

Concrete trestle has prestressed deck slabs, piles 40
W. N. Downey describes a double-track bridge of this type, 703 ft long, which the Atlantic Coast Line is now building near Yemassee, S.C.

New idea adds zest to safety 43
Colored slides showing violations of safety rules have revolutionized safety instruction on the Erie. Meetings are now lively affairs.

"Fish-bowl" shelter aimed at vandals 46
Structure built at Chicago by C&NW has fenestration of break-resistant Plexiglas on all four sides so interior will be fully visible.

B&B trailer has shop, living quarters 48
Unit developed on the Central of Georgia has fully equipped carpenter shop at one end, living space at the other. Will sleep four men.

New Haven cuts rail-laying force one-third 50
Modern machines, advanced ideas and sharper organization add efficiency in preparation for laying 35 track-miles of continuous welded rail.

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◀ Don't miss . . .

The Lehigh Valley is realizing important savings by repairing special trackwork in track. For doing this work it has built up a fleet of trucks fully equipped with everything a welder might need.

. . . in the October issue

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Published monthly by Simmons-Boardman Publishing Corporation. James G. Lyne, Chairman of the Board, Arthur J. McGinnis, President and Treasurer, Duane C. Salisbury, Executive Vice-President, Harry H. Melville, John R. Thompson, John S. Vreeland, Robert G. Lewis, M. H. Dick, Walter R. Browder, Joseph W. Kizzia, Michael J. Figa, Jr., George W. Hutchings, R. C. Van Ness, Vice-Presidents, George Dusenbury, Vice-President and Editorial and Promotion Director.

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BRANCH OFFICES: 1081 National Press Bldg., Washington 4, D.C.; 1501 Euclid Ave., Cleveland 15; 244 California St., San Francisco 11; 1336 Wilshire Blvd., Los Angeles 17; 3908 Lemmon Ave., Dallas 19, Tex.; Jericho Manor, Jenkintown, Pa.; Suite 203, Carlton House, Pittsburgh 19, Pa.; 22 Eighth St., N.E., Atlanta 9, Ga.

FOREIGN REPRESENTATIVES: Sibley-Field Publishing Co., Ltd., 8/9 Clerkenwell Green, London E.C. 1, England, Georg J. Linder, continental European representative, (16) Frankfurt am Main, Wittlesbacher Allee 60, West Germany.

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Subscription price to railroad employees only in the U.S., U.S. possessions and Canada, $2.00 one year, $3 two years, payable in advance postage free. All other countries, $8 one year, $16 two years. Single copies 75¢.

Address all subscriptions and correspondence concerning them to: Subscription Department, Railway Track and Structures, Emmett Street, Bristol, Conn. Changes of address should reach us three weeks in advance of the next issue date. Send old address with the new, enclosing, if possible, your address label. The Post Office will not forward copies unless you provide extra postage. Duplicate copies cannot be sent.

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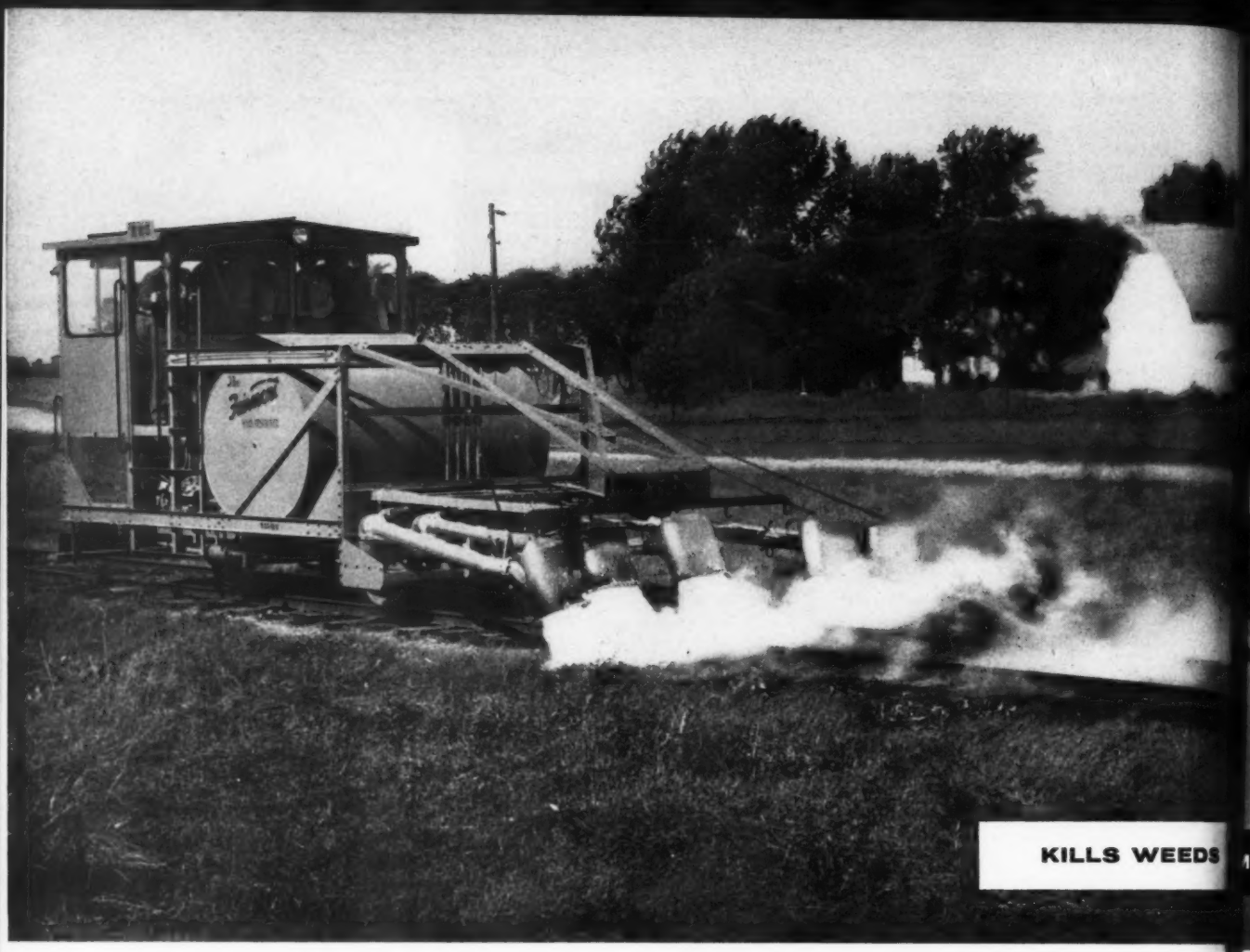
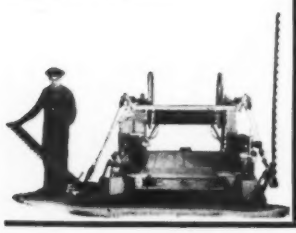


FAIRMONT

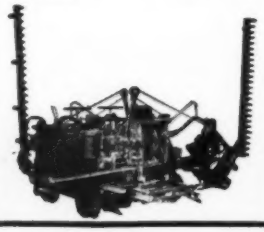
Works all year 'round–kills weeds, melts snow!

Simple and practical, THE FAIRMONT W55 WEED BURNER serves two purposes with maximum efficiency and minimum expense. In winter the W55 melts snow, even 20″ of snow in 30° below zero weather! It does the work of 50 to 75 men in a large yard, keeps switches clear and trains operating. In other seasons the W55 kills weeds in a solid 20′ width of track, or 8′ on each shoulder, at about 4 MPH. Burning is the most economical means o having clean yards and main lines. Four of the fi burner heads are swing-type with hydraulic contro operated from the cab. Each burner head is fitte with three atomizing nozzles. Machine has a du drive, mechanical for weed burning and slow-spe hydraulic for snow melting. Save time and money investigate now.

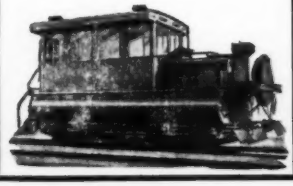
M5 SERIES A WEED MOWER is a sturdy unit with simplified controls. Equipped with automatic cutter bar release.



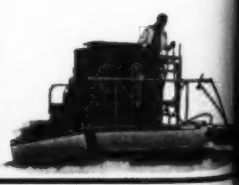
W24 SERIES A WEED MOWER gives close mowing due to accurate hydraulic control. Hydraulic sickle drive for smooth operation.



W66 SERIES B WEED SPRAYER is a complete, self-propelled unit. A single machine gives maximum availability and is highly maneuverable.



W78 SERIES B WEED SPRAYER quality at low cost. Excellent for lines, short lines, and yard tracks. to operate.



Helps from Manufacturers

The following compilation of literature—including pamphlets and data sheets—is offered free to railroad men by manufacturers to the railroad industry. To receive the desired information, write direct to the manufacturer.

•

TIE TAMPERS. The complete line of McWilliams Tampers is reviewed in an 8-page bulletin now available. Designated T-600, the new bulletin describes and illustrates the company's production, Multi-Purpose 8, spot and jack tampers. Details and specifications of each machine are given. The fundamental principles incorporated in the units are described and illustrated schematically. Also included are photographs and a brief description of the company's demountable set-off. (Write: *Railway Maintenance Corporation, Dept. RTS, P.O. Box 1888, Pittsburgh 30, Pa.*)

WHEELED TRACTOR. A new 16-page, 4-color bulletin is available which describes and illustrates the 218-hp Model C Tournatractor. Designated Form TD-280, the bulletin points out the advantages of using the rubber-tired tractor for many earthmoving applications. Pictures, cut-away drawings and schematic diagrams are used to illustrate the features of the machine. Specifications for the Model C are included. Optional attachments that are shown and briefly described include a snow plow, side-boom crane and "switchtractor" with standard railroad-car coupling. (Write: *LeTourneau-Westinghouse Company, Dept. RTS, 2301 NE Adams St., Peoria, Ill.*)

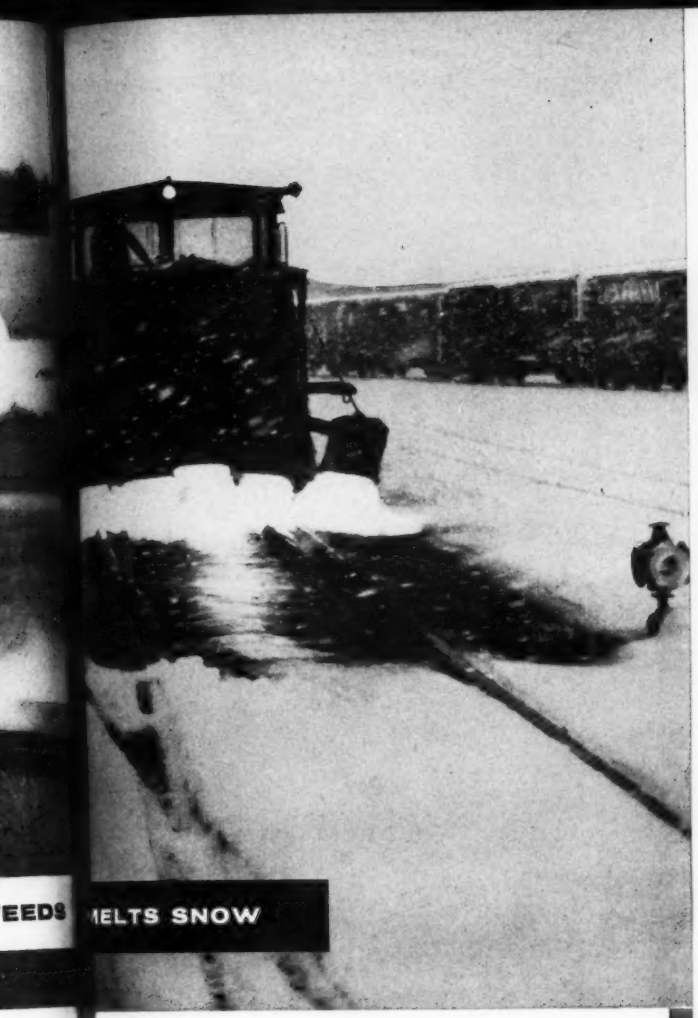
TIMBER TREATMENT. The Osmose method of inspection and spray treatment of bridges and trestles is explained in a folder now available. The folder describes how treatment to arrest decay and prevent further decay in a structure is applied at the same time that a thorough inspection is being performed. A table is included which can be used as a guide for determining when a structure should be considered for the in-place treatment. (Write: *Osmose Wood Preserving Company of America, Inc., Bridge Inspection & Treatment Division, Dept. RTS, 980 Ellicott St., Buffalo 9, N. Y.*)

MOTOR GRADERS. The main features of Caterpillar's three motor graders are described in a new 8-page, 2-color booklet, entitled "Top Performers." Designated Form DE 914, the booklet gives the advantages of using the 150-hp No. 14, 115-hp No. 12 and 75-hp No. 112 motor graders. Each of the machines is shown with on-the-job photographs. (Write: *Caterpillar Tractor Company, Dept. RTS, Peoria, Ill.*)

TRACTOR COMPRESSOR. A loose-leaf page is available that describes and illustrates the LeRoi 125 Tractair. Designated Form P-111, it includes comprehensive specifications of the compressor, engine and tractor. Weights and dimensions also are given. (Write: *LeRoi Division, Westinghouse Air Brake Company, Sales Promotion Department, Dept. RTS, Milwaukee 1, Wis.*)

CRANE-EXCAVATORS. The features of the American 500-Series crawler crane-excavator of 40 tons capacity are described in a new 24-page catalog. Illustrations show the component parts of the machine as well as its use in various applications, such as working as a crane, or with a dragline, shovel, magnet or backhoe. Optional equipment available for use with the unit is also pictured and briefly described. A picture sequence shows how the machine is stripped down for transporting by trailer truck. (Write: *American Hoist & Derrick Co., Dept. RTS, St. Paul, Minn.*)

CONCRETE-FLOOR HARDENER. The advantages of using Masterplate "iron clad" concrete floors are explained in a new 24-page bulletin. Designated Bulletin MP-4d, it presents the major features desired in any industrial floor which is subject to heavy use, such as wear and corrosion resistance, economy, spark resistance, static-dissemination, color and non-slip, non-dusting, easy-to-clean surfaces. The materials used and the method of installation are described and illustrated. Pictures showing actual installations are also included. (Write: *The Master Builders Company, Dept. RTS, Cleveland 3, Ohio*)



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50
LEADER
FOR HALF A CENTURY

Fairmont burners can easily pay for themselves clearing snow from switches in just one bad season.

Fairmont
RAILWAY MOTORS, INCORPORATED
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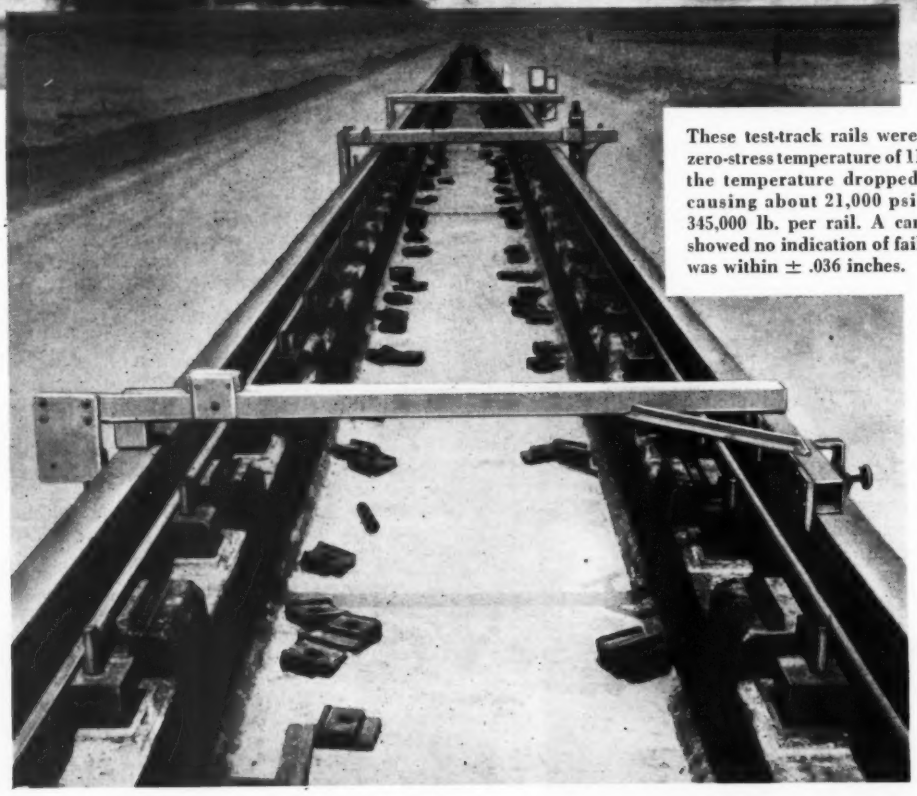
"RIBBONRAIL" WELDS... WHERE QUALITY IS A MUST



These test-track rails were installed for a zero-stress temperature of 115°F. One night, the temperature dropped to 10° above, causing about 21,000 psi in tension, or 345,000 lb. per rail. A careful inspection showed no indication of failure. Alignment was within ± .036 inches.

At Edwards Air Force Base, a test vehicle will be able to slide over these rails at four times the speed of sound—Mach IV. They're designed to take downloads up to 100,000 pounds at 2900 ft./sec. Every joint was welded perfectly by RIBBONRAIL Service. No rejects.

This is 171-lb. special rolled crane rail with a cross-section of 17 sq. in., laid on continuous reinforced concrete beams. But it was joined by the identical LINDE RIBBONRAIL Process that would be used on your own tracks—oxyacetylene pressure welding.

Here's how quick, simple, and economical RIBBONRAIL Service is. First, rail ends are butted together, given a single cut with a rail saw, inspected for flaws, cleaned, and deburred. Hydraulically forced together at 2500 psi., and heated to 2250°F. by a special welding head, they fuse to form a joint. Average time is five minutes for 115-lb. rail.

Then all joints are "normalized"—heated to 1500°F. by an oscillating head similar to the welding head. This improves the weld, relieves internal stresses, makes failure far less likely under repeated strain.

For substantially lower costs than jointed rail, you can enjoy similar advantages with RIBBONRAIL Service. And that includes *all* costs—for materials and labor from storage pier to flat car. In 20 years, more than 40 major railroads have adopted LINDE's RIBBONRAIL Service. Call your nearby LINDE representative, or write Railroad Department, Linde Company, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N.Y. In Canada: Linde Company, Division of Union Carbide Canada Limited.

RAILROAD DEPARTMENT

Linde
TRADE-MARK

UNION CARBIDE

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NEWS ABOUT PEOPLE

ASSOCIATION OF AMERICAN RAILROADS—Curtis D. Buford, assistant general manager of the Western District of the New York Central at Cleveland, Ohio, has been appointed vice president in charge of the operations and maintenance department, AAR, Washington, D.C., effective August 10. Mr. Buford succeeds **Richard G. May,** whose death was announced in July.

ATLANTIC COAST LINE—Henry E. Keniston, assistant engineer at Wilmington, N.C., has been appointed general supervisor of roadway machinery at Waycross, Ga.

BALTIMORE & OHIO—Otis G. Wilbur, assistant engineer of bridges and buildings at Batlimore, Md., has retired after nearly 48 years of service.

BURLINGTON—C. J. Gaines, roadmaster at Beardstown, Ill., has been promoted to assistant engineer of track at Omaha, Neb., succeeding **L. R. Hall** who has been promoted to engineer of track at Chicago. Mr. Hall succeeds **F. H. McKenney** whose death was announced in the July issue.

D. V. Sartore, assistant engineer at Chicago, has been promoted to assistant engineer of bridges, succeeding **J. W. Davidson** who has been promoted to engineer of bridges. Mr. Davidson succeeds the late **M. L. Johnson. C. A. McColgin,** supervisor bridges at Chicago, has been promoted to assistant to engineer of bridges.

CANADIAN NATIONAL—The following appointments have been made involving positions connected with a terminal project at Toronto, Ont.: **V. R. Cox,** assistant engineer on the British Columbia district, to project engineer, access line; and **J. Sutton,** design engineer at Montreal, to project engineer.

CANADIAN PACIFIC—The following appointments at Winnipeg, Man., have been announced: **K. A. Truman,** assistant regional engineer, to regional engineer; **C. K. Holden,** district engineer, to assistant regional engineer; **F. A. Felstead,** district engineer at Moose Jaw, Sask., to assistant engineer; **G. P. Beach,** division engineer at Brandon, Man., to assistant engineer; **C. F. King,** roadmaster at Coronation, Alta., to supervisor, maintenance of way; **J. A. Crooks** to supervisor, welding and work equipment.

The following appointments at Vancouver, B.C., have been announced: **W. G. Dyer,** regional engineer at Winnipeg, transferred to Vancouver; **R. A. Swanson,** district engineer at Calgary, Alta., to assistant regional engineer; **J. Cherrington,** district engineer, to assistant engineer; **G. G. Tyke,** assistant district engineer, to assistant engineer; **G. J. Yorston** to supervisor, maintenance of way; **J. Bygate** to supervisor, welding and work equipment.

CHESAPEAKE & OHIO—W. K. Weaver, Jr., assistant to vice president-operations, and an engineer by training and experience, has been promoted to general superintendent of transportation at Huntington, W. Va.

CHICAGO UNION STATION—F. E. Austermann, assistant chief engineer, has been promoted to chief engineer, effective August 1, succeeding **William Landess** who has retired after 34 years of service with this company. **M. B. Wood,** chief clerk to chief engineer, has been promoted to office engineer. **P. M. Yorke,** assistant supervisor signal and track, has been promoted to supervisor signal and track. The positions of assistant chief engineer and assistant supervisor signal and track have been abolished.

ELGIN, JOLIET & EASTERN—Gerald J. Haney, Jr., has been appointed assistant to chief engineer at Joliet, Ill., succeeding **Don R. Wilson,** resigned.

FRISCO—R. E. Nichols, assistant general foreman bridges and buildings and water service at Enid, Okla., has been promoted to general foreman bridges and buildings and water service at Chaffee, Mo., succeeding **N. D. Bryant** who has been transferred to Fort Scott, Kan. **I. Planchon,** assistant engineer at Enid, Okla., has been appointed general foreman bridges and buildings and water service there.

LOUISVILLE & NASHVILLE—Joseph L. Fergus, assistant chief engineer at Louisville, Ky., has retired, effective August 1.

MILWAUKEE—H. W. McCall, chief carpenter at Miles City, Mont., has been transferred to LaCrosse, Wis., succeeding **A. E. Hansen** who has been transferred to Savanna, Ill. Mr. Hansen succeeds **J. E. Collings** who has in turn been transferred to Miles City.

MISSOURI PACIFIC—C. L. McFadin, assistant engineer at Coffeyville, Kan., has been promoted to acting division engineer at Kansas City, Mo., succeeding **J. E. Martin** who has been transferred to the Eastern division there. Mr. Martin succeeds **P. D. Tracy** who has been transferred to Kingsville, Tex., succeeding **T. C. McCord,** retired.

NEW YORK CENTRAL—W. W. Kerr, assistant division engineer at Columbus, Ohio, has been transferred to Chicago, succeeding **C. L. Nolan** whose retirement was announced in the August issue. **J. A. Carey,** supervisor track at Elkhart, Ind., has been promoted to assistant division engineer at Toledo, Ohio.

William G. Jones, supervisor track at Cleveland, Ohio, has been promoted to assistant division engineer at Utica, N.Y. **Jerry R. Kerr,** instrumentman at Indianapolis, Ind., has been promoted to assistant engineer there. **J. I. O'Connor,** assistant engineer at New York, has retired after 42 years of service.

NORFOLK & WESTERN—C. W. Flory, resident engineer at Bluefield, W. Va., retired recently after nearly 49 years of service.

NORTH WESTERN—Oren McCulloch, maintenance gang foreman at St. Paul, Minn., has been appointed temporary assistant roadmaster there, succeeding **Raymond Stotka** whose appointment to acting roadmaster at Eau Claire, Wis., was announced in the August issue.

RICHMOND, FREDERICKSBURG & POTOMAC—George W. Guinn, Jr., supervisor track at Alexandria, Va., has been promoted to assistant engineer of construction at Richmond, Va., succeeding **Charles E. Whitemore** who has been promoted to assistant manager real estate and industrial development.

ROCK ISLAND—Grady Davis, track supervisor at Biddle, Ark., has been promoted to acting roadmaster at El Dorado, Ark., succeeding **V. Estes,** on leave of absence due to illness.

SANTA FE—F. L. Rees, who has been on a year's leave of absence attending the school of industrial management at the Massachusetts Institute of Technology under an Alfred P. Sloan Fellowship, has returned and has been appointed acting regional engineer on the Coast Lines at Los Angeles, Cal. Mr. Rees was division engineer at Emporia, Kan., at the time he was granted a leave of absence.

A. B. Kelly, assistant engineer at Galveston, Tex., has retired after more than 40 years of service.

SOUTHERN—Earnest H. Addington, assistant track supervisor at Spartanburg, S.C., retired recently.

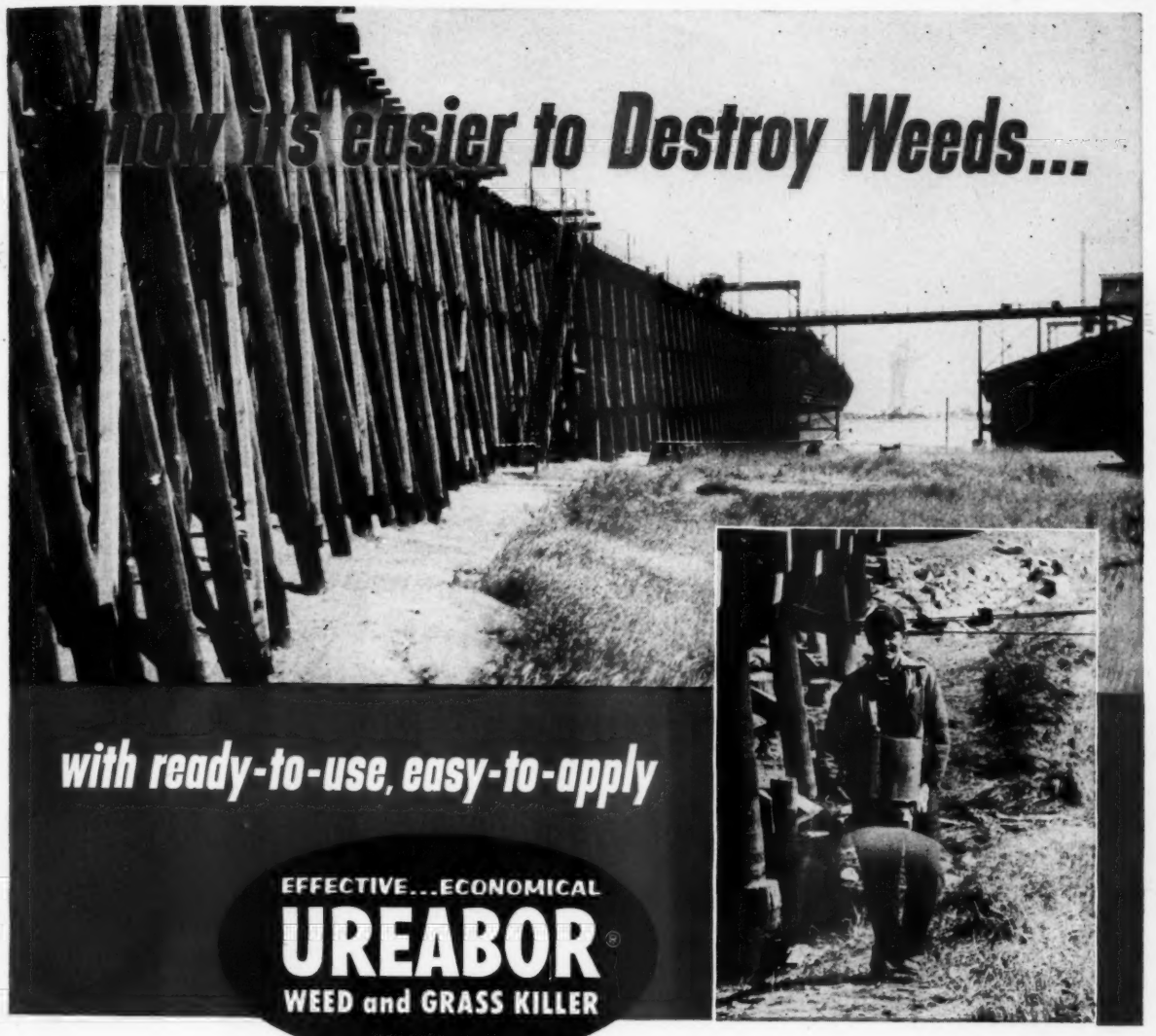
SOUTHERN PACIFIC—William W. Allen, assistant division engineer at Stockton, Cal., has been promoted to senior assistant division engineer at Oakland Pier, Cal., succeeding **G. H. Fair** who has retired after nearly 39 years of service. **H. A. Kent** has been appointed general track foreman at Deming, N.M.

TEXAS CITY TERMINAL—H. M. Gresham has been appointed chief engineer, succeeding **H. O. Wray,** secretary and chief engineer, who retired July 1.

Biographical Briefs

Robert B. Rhode, 45, who was recently promoted to chief engineer of the Duluth, Missabe & Iron Range at Duluth, Minn. (*RT&S*, July, p. 10), was born at Duluth and graduated from the University of Minnesota in 1937 with a degree in civil engineering. Mr. Rhode entered railroad service in 1937 with the Chicago, St. Paul, Minneapolis & Omaha, now the Chicago & North Western, at St. Paul, Minn. Later that year he left the railroad and joined Ellerbe & Co., architects and engineers. In 1939 he joined the Northern Pacific as a draftsman at St. Paul. He was subsequently promoted to engineering inspector in 1942, assistant engineer in 1944 and division engineer at Missoula, Mont., in 1946. Two years later

(*Continued on page 96*)



Here's your thriftier, easier way to stop weeds! Look in that hand and you'll see enough UREABOR to kill vegetation in a 12 sq. ft. area! Consider the convenience and economy this can mean to you. Consider, too, that a UREABOR "kill" remains effective for a season or longer. And UREABOR has important safety features; it is *nonflammable, nonpoisonous* when used as directed, and *does not corrode* ferrous metals. Protect your timber structures, yards and buildings from fire-hazardous weeds by applying UREABOR weed killer now... it's easier to apply!

Nothing to mix... no water to haul

One easy application—dry—may keep ground weed-free for a season or longer!

This special spreader for UREABOR makes application fast and easy...

The PCB Spreader applies UREABOR to best advantage, at prescribed low rates. It holds enough UREABOR to treat up to 2500 sq. ft. without refilling—weighs a mere 6 lbs.

Write today for complete information!

AGRICULTURAL SALES DEPARTMENT

United States Borax & Chemical Corporation

PACIFIC COAST BORAX COMPANY DIVISION

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NOW... SAVE UP TO 13,000 SPIKES PER MILE

... reduce tie splitting from excessive spiking

GAGE LOCK SPIKES

Two Gage Lock Spikes to a plate do a better holding job than 4 cut spikes on tangents and light curves. Fewer spikes are driven — causing less tie damage and permitting a saving of nearly 13,000 spikes per mile. The Gage Lock Spike is a plate fastening as well as a rail spike. It has an indented throat, offset at the tie plate surface. Result: thrust and wear are avoided from the edge of the rail base.

TIE PLATE LOCK SPIKES

Both the Tie Plate Lock Spike and the Gage Lock Spike hold the rail to gage and avoid plate cutting. When driven to refusal, the spread shank is compressed and binds against the walls of the hole with spring pressure. Play is eliminated — plates are held against movement — rail is held to gage and plate cutting is avoided.

RAIL LOCK SPIKES

Rail Lock Spikes offer the same design as Gage Lock Spikes, but are not offset at the plate surface. The throat protrudes 1/16"—resultant pressure binds the spike against the rail base edge. Play is eliminated between the tie plate shoulders — the rail is held to a true gage.

Forward-looking management can extend the cycle of track structure by using Lock Spikes. One regaging operation costs more than the initial cost of installing Lock Spikes. Specify spikes having a low annual cost—Specify Lock Spikes.

GAGE LOCK SPIKE

TIE PLATE LOCK SPIKE

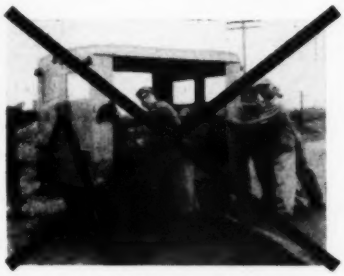
BERNUTH, LEMBCKE CO., INC.

420 LEXINGTON AVENUE, NEW YORK 17, N.Y.

GANDY WAGON

Rail-Hiway conversion of the dependable, economical VOLKSWAGEN

TRANSPORTS *crews and tools over track or highway*
SAVES *hundreds of man-hours*
OFFERS *unobstructed vision for track inspection*



NO MORE OF THIS!

Carries 9 men over highway or track at 50 mph-plus; rear-engine design gives down-in-front view of track when inspecting.

THE GANDY WAGON is both a motor track car and inspection car. Depending on interior appointments, it can be either a transporter of section crews with their tools or a de luxe station wagon for engineers and supervisors with unobstructed down-in-front view of the track. Saves hundreds of working-crew hours by shifting men where they are needed in faster time.

The versatile Gandy Wagon does not interfere with train traffic; nor do trains interfere with it. This is because, in only 90 seconds, one man can transfer the Gandy Wagon from highway to track or back, at any grade crossing, by means of its unique electrically operated turntable-jack. At end of track run, the Gandy Wagon is just as easily turned around.

In track operation, a high degree of safety is achieved by: (1) standard 14-inch Kalamazoo wheels fitted with safety rims (these wheels negotiate self-guarded frogs); (2) entire front weight of vehicle rests on the flanged wheels which are hydraulically braked in conjunction with the car's rear wheels; (3) turntable-jack is powered by an independent 12-volt electrical system which could also power a microwave telephone.

Cruising speed of the Gandy Wagon over rail or highway is 50 mph or more; gas and oil consumption is less than half that of the average light truck or station wagon. Air-cooled motor; no anti-freeze nuisance; exceptionally low maintenance costs and high tire mileage are famed Volkswagen features which have made VW a light truck favorite in the U.S. Nation-wide service facilities.

You can buy and run a Gandy Wagon for less than half the cost of similar equipment. Leasing plan also available.

Telephone or write for details today.

See the Gandy Wagon at Booth 181, Coliseum

One man easily transfers Gandy Wagon to track from highway (or vice versa) at any grade crossing by means of electric turntable-jack (see inset).

GANDY WAGON *Corporation*

Box 151, Oyster Bay, N. Y.

Telephone Oyster Bay 6-0518

Mechanization repercussions

Within the last year this magazine has received several letters from section and extra-gang foremen who have been forced to take less remunerative positions because of the mechanization and reorganization of M/W forces.

As much as we deplore the fact that some of our readers have suffered as a result of mechanization, our replies to these letters could not offer any encouragement in their hope that working conditions would revert back to the time when maintenance was largely carried out by more men with hand and small power tools.

One writer made the statement that, with mechanized cycle maintenance, the tracks were not being maintained to the same standards which prevailed when section forces were the mainstay of maintenance.

This statement would be extremely difficult to prove. If there really are locations where track standards have been lowered, we cannot believe that this can be charged to mechanization. Other factors, such as the elimination of passenger-train operation, or a substantial reduction in traffic, can be responsible for management's decision to reduce standards on certain lines.

More important, however, is the railroads' lack of funds which prevents them from carrying out maintenance programs of the size they desire. High wages and increased costs of materials and equipment permit only so much work to be done with the money allocated. Faced with the choice of spreading these monies uniformly over all the trackage or of taking some from the minor lines to retain the high standards of the trunk lines, management has only one choice. It is as simple as that.

New method makes a dull subject interesting

This piece is about safety. We didn't put the word "safety" in the title because we were fearful its presence there would cause readers to turn the page hastily. For it is apparent that the average maintenance man, whether supervisor or rank-and-file employee, has had the subject drummed at him until he has acquired a sort of immunity to it.

A recent incident illustrates this point. The program committee of a club of maintenance-of-way officers was discussing the subjects that might be featured at the meetings to be held during the coming season. One member was describing a new approach that one road had developed to the safety problem. He described the idea with enthusiasm and proposed that it be featured on the program of one of the meetings. The suggestion was greeted with silence and blank looks. Obviously, the other members of the committee, all railroad men, did not share the enthusiasm of the one who had made the suggestion. After some urging one of them explained the general reaction this way:

"I think the idea is excellent. It's an entirely new method of safety instruction and I'm sure it would make an outstanding program. But here's the hitch: When the meeting announcement is sent out to the club members it will undoubtedly mention that safety will be the subject of the program. The result will be to discourage members from attending the meeting."

There is no point in arguing with that line of reasoning. Attendance is the most important criterion of the success of a meeting. The program may turn out to be most interesting, but if the attendance is small the meeting is a failure.

There is something tragic about the prevailing attitude toward safety on the railroads. The tragedy of it is that people can become so resistant to a subject involving their own physical welfare. But this resistance is there and it has to be dealt with. In this endeavor maintenance officers can continue to hold the conventional safety meetings before audiences that are indifferent and apathetic. Or they can keep trying to find ways of converting these meetings into lively sessions which make a lasting impression on those in attendance.

To some who have struggled with the problem for a long time, this may seem to be a hopeless task. But this doesn't apply to the Erie. It may be difficult to conceive of maintenance officers talking about safety meetings with enthusiasm, but ask an Erie man about the new method of safety instruction in use on that road and you'll get an enthusiastic response.

This magazine happens to share the prevailing attitude toward safety meetings. By and large they *are* dull and uninteresting. And the introduction of a really effective idea for making them more interesting is a rare occasion indeed. That explains why articles about safety are found so rarely in this magazine.

The Erie plan provides an opportunity for one of these rare occasions. It is explained fully in this issue beginning on page 43. It is not put forward here as the final answer to the problem of making safety meetings interesting. But if anyone else has a better plan we haven't heard of it.

trim right-of-way

MAINTENANCE COSTS

with this

NEW HIGH SPEED

BRUSH CUTTER!

★ Light weight pack and shoulder carrying position reduces operator fatigue

★ More powerful 2.5 h.p. motor designed for continuous, heavy-duty service

★ Saw arm elbow and knee joints give operator extra maneuverability and firmer footing

★ Lower-cost, easier maintenance . . . "V" belt drive

"Slash" is the word to describe what the new Southworth portable Brush Cutter does to right-of-way maintenance costs. One operator, plus this lightweight, versatile performer, does the work of eight men with brush hooks or scythes. The two big features that make this equipment so valuable are extreme maneuverability and "work horse" power. Exclusive saw arm elbow and knee joints provide easy cutting of brush, trees or limbs at any height within reach. Extra power permits cutting of trees up to 8" and larger, by notching.

The major portion of the Brush Cutter's 39 lbs. is carried comfortably on the operator's back...nature's saddle...where the weight is hardly noticeable. "V" belt drive simplifies field maintenance, eliminates costly repairs, gear stripping, etc. Added features include automatic clutch, finger tip throttle control and large gas capacity for long hours of uninterrupted use. The cutting arm is easily disassembled in less than one minute for convenient transportation. Special 10" heavy duty circular saw is positioned for operator safety.

Write for descriptive bulletin and prices . . .

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● **MECO RAIL AND FLANGE LUBRICATORS**

double to quadruple life of curved rails and locomotive wheel flanges. Available for single and double rail installations, main lines, yards, industrial tracks, running rails and guard rails.

● **MACK REVERSIBLE SWITCH POINT PROTECTOR**

Prolongs the life of switch points about 4 times; then is reversed and again extends the switch point life for another similar period.

● **MECO POWER RAIL LAYER**

Reduces labor cost to minimum in laying Standard Rails, Long Rails, Continuous Welded Rail. Operates efficiently with large gang of 100 men or more and requires a machine crew of only 3 or 4 men.

Announcing the NEW

JORDAN HYDRAULIC

SPREADER-DITCHER

Jordan Hydraulic Spreader-Ditcher with wings raised to provide maximum clearance for travel to point of use.

Jordan Hydraulic Ditcher-Spreader in operation, with wings lowered.

BETTER PERFORMANCE—New hydraulic control system, combining the achievements of Jordan research with more than sixty years' experience in manufacturing railway equipment, provides unequalled performance. Hydraulic power assures: smooth, positive operation; accurate positioning; faster operation; more work-capacity; safety.

INCREASED VERSATILITY — The Jordan Hydraulic Spreader-Ditcher has year-around usefulness for all types of right-of-way improvement and maintenance operations, including spreading; ditching; building up embankments; ballasting; snow plowing; and moving industrial material such as steel mill slag on dump lines.

COSTS LESS–The Jordan Hydraulic Spreader-Ditcher costs *less* than other equipment designed for the same purpose because it accomplishes *more* in a given period of *time*. Sturdy construction assures continuous, uninterrupted work output. Wide versatility makes possible substantial savings in time and man-power in all types of maintenance operations the year 'round.

Write or call today for free brochure describing the many unique, exclusive features of the Jordan Hydraulic Spreader-Ditcher. We also will be pleased to arrange for a demonstration at your convenience.

O. F. JORDAN COMPANY

WALTER J. RILEY, *Chairman of the Board*

EAST CHICAGO, INDIANA

JORDAN SPREADER

"DOES THE WORK OF AN ARMY OF MEN"

"Life of rail on high side of curve has been extended up to 300%."
"Outside rail on curves, formerly changed every two years, now transposed only when low rails become corrugated and flattened."
"Less gauging due to rail wear, saving labor and ties."
"Canting of rail on curves has been reduced."
"Significant reduction of wear on switch points, frogs, and special trackwork."
"Without track lubrication, leading wheels of diesels required turning for flange wear at 20,000 miles."
"250% increase in wheel life."
"Lowest maintenance cost."
"Best control of grease flow."

Talk about big savings with Racor Lubricators!

These are typical results obtained by using Racor® rail lubricators. For savings like this on your road consult your Brake Shoe representative.

AMERICAN **Brake Shoe** COMPANY

RAILROAD PRODUCTS DIVISION
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Racor units lubricate up to 360° included angle of curve within ten miles of track. Additional capacity is obtained in multiple installations. Models available for both jointed and welded rail.

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T-POWER construction stops track creepage with —

1. Vise-like grip on rail resists *10,000 lbs. and more* pressure, actually 4 times more than "tie in ballast."

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Whichever way you apply the T-POWER constructed IMPROVED FAIR rail anchor you can be sure of tough, track-holding, movement-stopping, rail-gripping power and the exclusive overdrive stop prevents overdriving. Result: Reduced costs; more flexibility of use; perfect fit; greater holding power

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STRIKING FACE provides a perfect target for fast, accurate application by men or machines. **OVERDRIVE STOP** assures proper application — everytime . . . Custom manufactured to fit all types of rail regardless of condition.

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Railway TRACK and STRUCTURES

NEWS NOTES . . .

. . . a résumé of current events throughout the railroad world

The first monorail trains to operate on a daily basis in the United States are now in service at California's Disneyland. Supported by cemented pylons at heights up to 34 ft, the articulated trains, each with a capacity of 82 passengers, travel on pre-cast I-section concrete girders which serve as a track, carrying beam and guide rail. Built at a cost of about $1.3 million, the mile-long line is expected to provide a valid test of the Alweg system as a means of relieving congestion in auto-crowded cities.

A gain of $181 million is estimated in the net income of Class I railroads for this year's first six months. The estimated net is $308 million, compared with $127 million for the first half of 1958. The AAR statement also shows June's estimated net income up $24 million — to $73 million from June 1958's $49 million. The rate of return for the 12 months ended with June was 3.41 per cent. The steel strike clouds prospects for railroad earnings in the second half of the year.

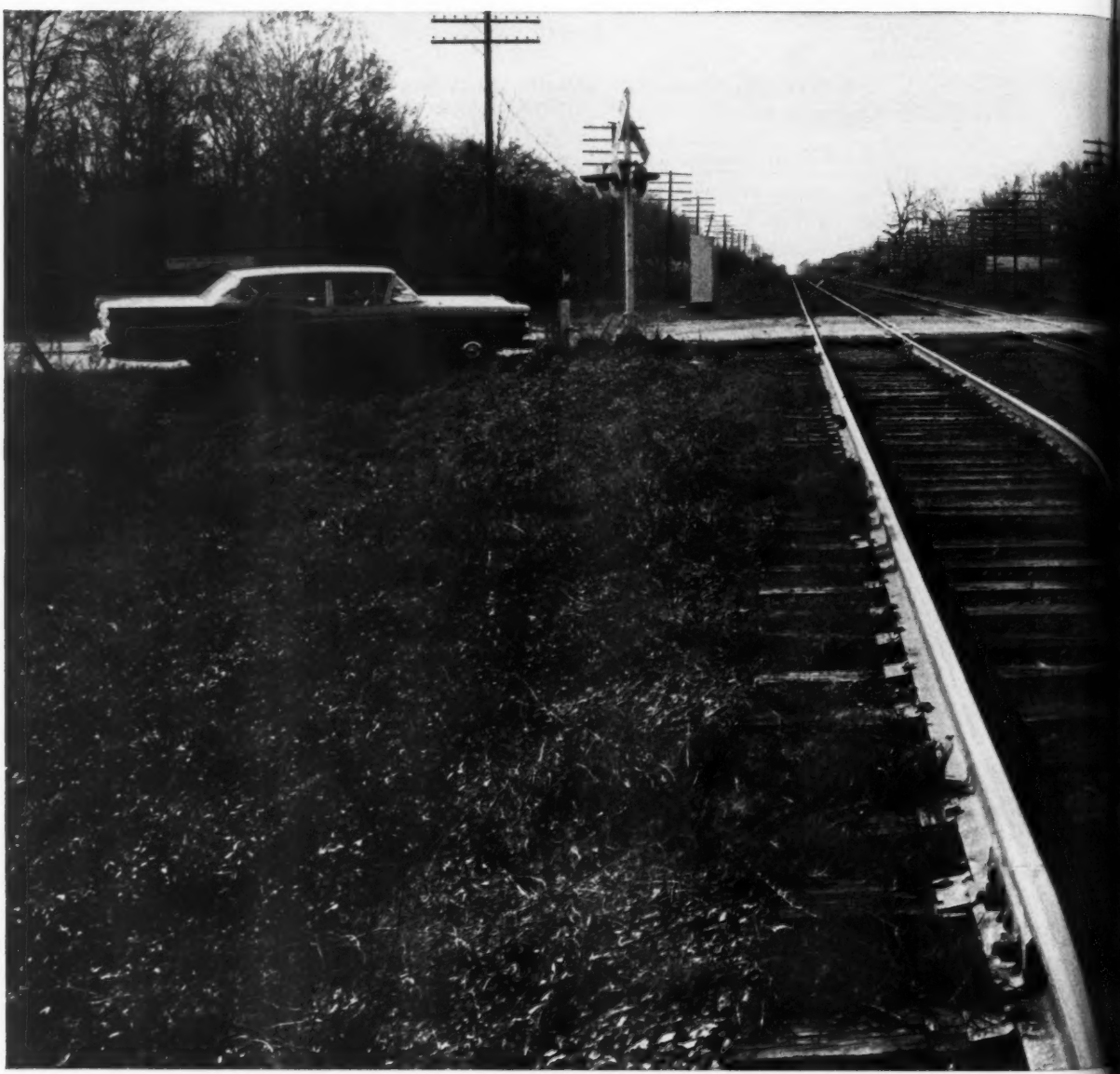
More than 100 members of the AAR already have accepted an insurance plan protecting them against financial losses from strikes. The plan is expected to strengthen the position of the carriers in coming to terms with the labor unions when current contracts expire November 1. By way of a counter move the Brotherhood of Locomotive Engineers decided on August 21 to start building a strike fund of "several million dollars." "We want to be in a strong position in the event the railroads force a strike on us," declared Guy L. Brown, grand chief engineer.

Greater use of continuous welded rail is reported for 1959. The Railroad Department of the Linde Company, Division of Union Carbide Corporation, reports that 16 railroads will weld 500 miles of track by the oxyacetylene pressure-weld process this year. A further increase in the use of this process is predicted for 1960.

The railroads' efforts to win the right to compete "side-by-side" with truckers apparently has that industry worried. If this right is granted, there are many truckers who "feel that the independent truck industry has seen its best days and is due to disintegrate." This statement was made by J. Robert Cooper, president of the American Trucking Associations, before a meeting of the Mississippi Trucking Association in Biloxi.

Full-crew laws of New York are under investigation by the Public Service Commission. Management and unions have until September 15 to submit written statements. The PSC wants to know in detail how both sides feel about the laws, all of which are at least 20 years old. However, Wisconsin railroads recently lost a battle to prevent the application of the full-crew law to diesel locomotives and, a few days earlier, California carriers were hit with a bill requiring the use of a fireman on diesels over 90,000 lb. This legislation was passed despite the railroads' contention that the diesel-firemen issue was a subject for labor-management negotiation—not legislation.

DOW | HERBICIDES



Put your vegetation control

Vegetation had its heyday during the recent period of deferred maintenance. Grasses got a strong foothold in ballast and berm. Brush reached shade tree proportions. The best way to spray yourself out of a spot like this is with Dow grass, weed and brush killers.

You can turn the maintenance clock back on grasses like Bermuda, Johnson and quack by spraying them with Radapon®. This powerful leaf-to-root grass killer gives you sure long-lasting control of the toughest grasses . . . no matter how heavily they've infested ballast and berm areas.

The surest way to get ahead of hardwood brush that has reached the stages where it tangles communication lines and hides fences . . . is to spray powerful, positive Veon® 245.

Yes, when you're trying to catch up with a vegetation control problem, the most *effective* product is the best product to use. That's why, especially now, you should make every shot count . . . with Dow grass, weed and brush killers. They play an important part in modern railroading. Learn how by sending the coupon today.

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Please send a copy of "Special Report To Railroads" on long-lasting vegetation control for modern railroads.

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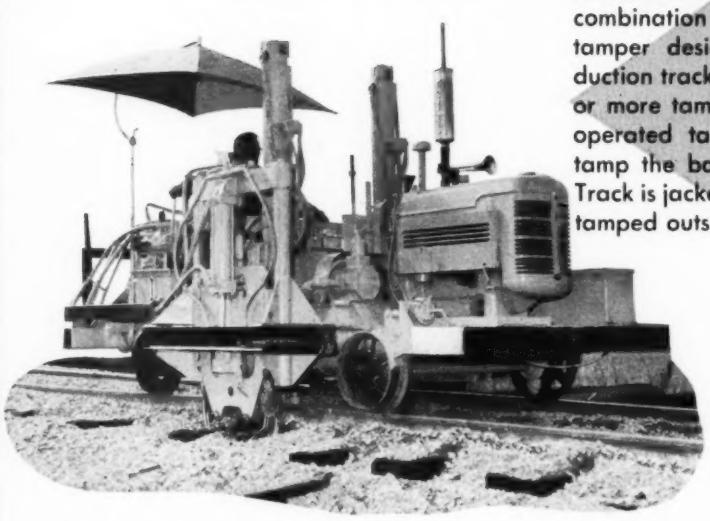
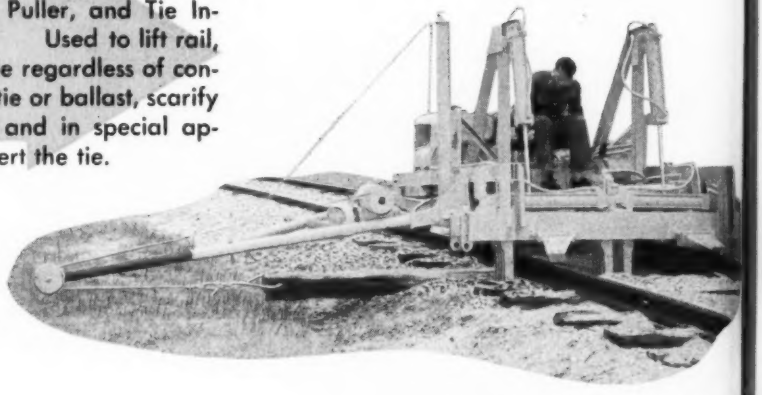
KERSHAW

KERSHAW SUPER-JACKALL – A combination hydraulic jack and tamper designed for high production track raises ahead of one or more tampers. Hydraulically operated tamping feet actually tamp the ballast under the tie. Track is jacked inside rail and ties tamped outside of rail.

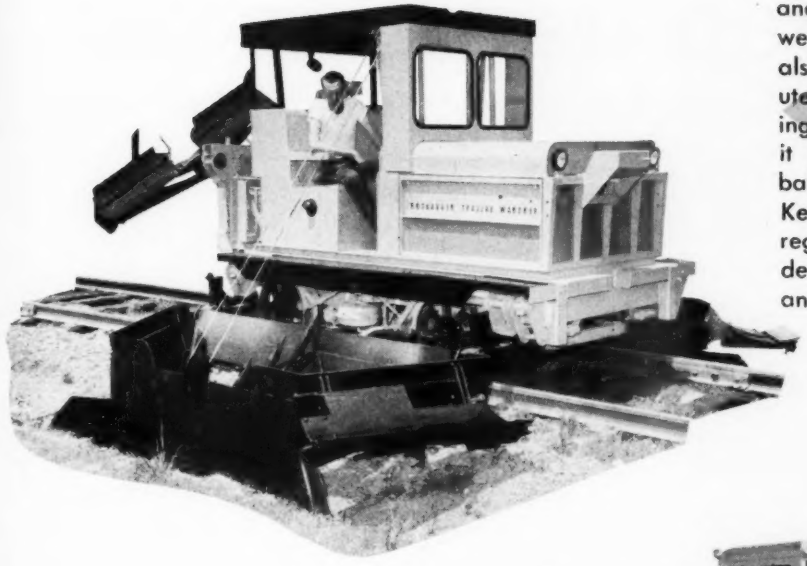


KERSHAW TIE REPLACER (Combination Rail Lifter, Tie Bed Cleaner, Tie Puller, and Tie Inserter) — Used to lift rail, remove old tie regardless of condition of the tie or ballast, scarify the tie bed, and in special applications insert the tie.



KERSHAW TIE BED CLEANER (With Tie Inserter Attachment) — Used to scarify tie beds after old ties have been removed. Special teeth enable the machine to scarify under the rail. After the tie bed is scarified, Tie Inserter Attachment then inserts new ties.

QUALITY MACHINES ANY



KERSHAW STANDARD BALLAST REGULATOR (Track Patrol) — Is used with out-of-face surfacing gangs, and as a track patrol to scarify, deweed, regulate and shape ballast. It also is used to regulate and distribute ballast after unloading in surfacing operations. With timbering gangs it is used to plow and spread the ballast from tie ends. The Kershaw Ballast Regulator is used to regulate and shape the ballast shoulder. Hand labor is not required in any of these operations.

KERSHAW HEAVY DUTY BALLAST REGULATOR (Shown With Broom Attachment On Rear) — Equipped with heavy duty truck axles with enclosed drive, longer wheel base, reinforced reversible wings equipped with heavy duty scarifying teeth, and many other heavy duty features. And also is used in all operations performed by the Standard Ballast Regulator, and all types of ballast maintenance work.

OTHER FAMOUS KERSHAW PRODUCTS

Kershaw Track Crane
Kershaw Ballast Cleaner
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Kershaw Foreman's Sight Car
Kershaw Utility Derrick
Kershaw Mocar Crane
Kershaw Track Broom
Kershaw Spot Tamper
Kershaw Rotary Snow Plow
Kershaw Road-Crossing Scarifier
Kershaw Universal Set-Off Assembly

See These And Other Kershaw Machines On Display At Booths 21-S through 28-S During The Roadmasters And Maintenance Of Way Exhibit At The Chicago Coliseum, September 14-17.

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Motorola Handie-Talkie® 2-way radiophone

TIME-SAVING "TALKING TOOL"

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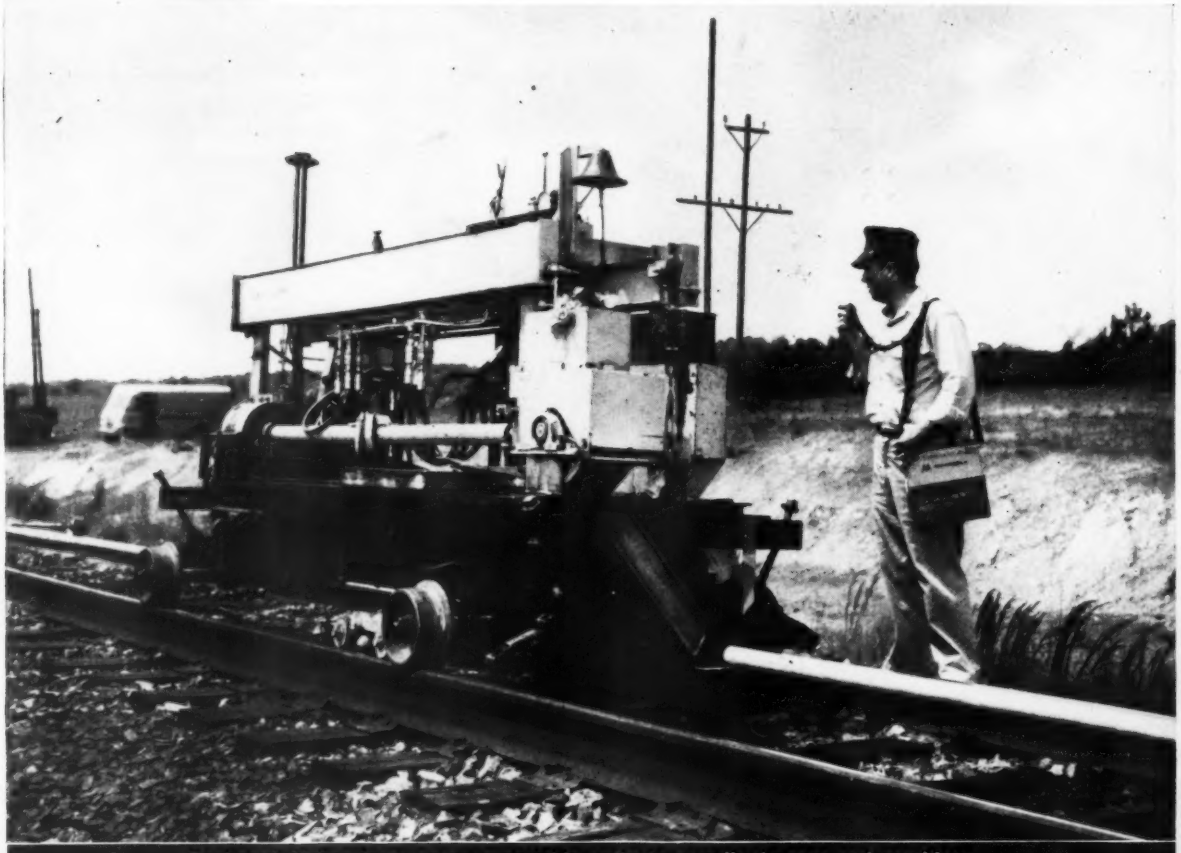

Seaboard Airline foreman uses portable radio to coordinate men and machines

Linking work crews spread over several miles of track . . . spanning rivers and gorges . . . providing direct, instant radio contact between foremen and other supervisory personnel—Motorola HANDIE-TALKIE portable 2-way radios add up to *more work per day and less train delay.*

These lightweight portables are railroad "tools" . . . built to meet the day in, day out demands of railroad service—anytime, anywhere. So make sure you have Motorola HANDIE-TALKIE radios on hand when and where you need them.

Your Motorola Railroad Radio Representative will show you exactly how these versatile "talking tools" can save you time, money . . . increase efficiency and promote safety all along the line. Give him a call or write today for complete technical information.

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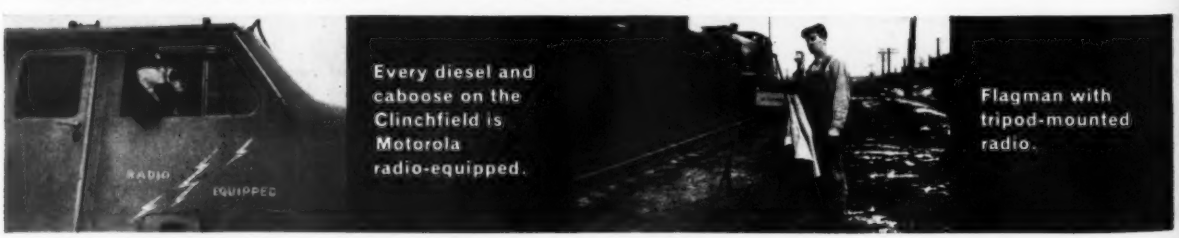
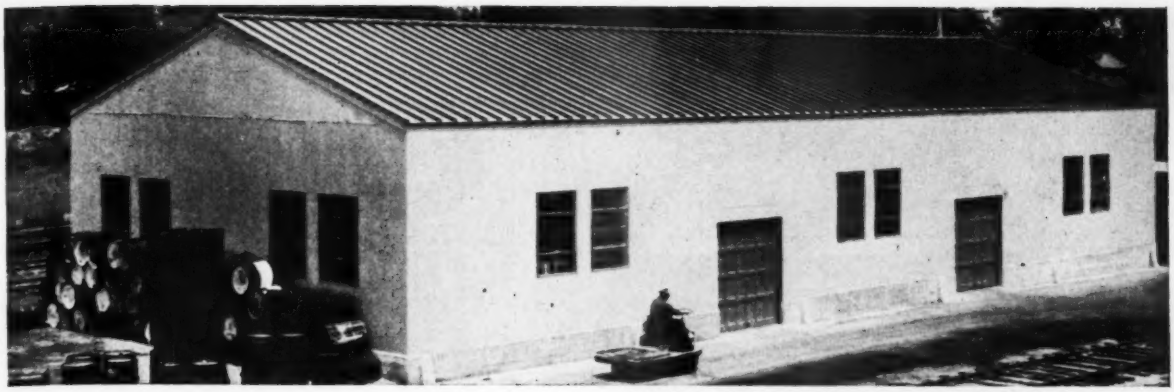

RADIO
EQUIPPED
Every diesel and caboose on the Clinchfield is Motorola radio-equipped.
Flagman with tripod-mounted radio.



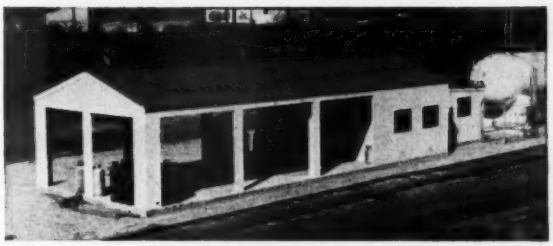
Forty-foot wide Armco Building serves Great Northern as a warehouse.

Here's How Armco Buildings Work for the Great Northern

These pictures show some of the ways the Great Northern Railway puts Armco Steel Buildings to work. Notice the variety of size, function, and window and door arrangements that are possible with these buildings. All are achieved with standard parts and accessories. Write us for facts on how you can build better for less the Armco Way. Get details about the attractive, durable, heavy-gage panel wall construction that makes an Armco Building your best building investment. Armco Drainage & Metal Products, Inc., 7629 Curtis Street, Middletown, Ohio.

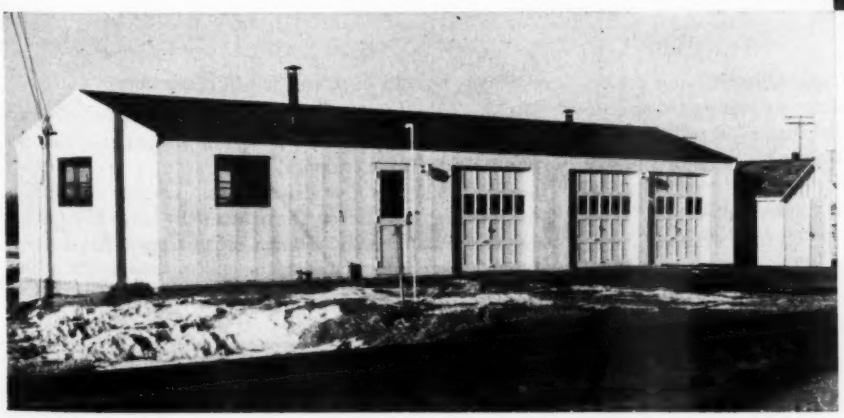
ARMCO BUILDINGS ARE SERVICE-TESTED

Noncombustible steel construction is ideal for this propane gas bottling building serving the Great Northern at St. Paul, Minnesota.



New steels are born at Armco

▲ This 12' x 14'-8" portable depot at Grasston, Minnesota, is a typical example of the Great Northern's use of small Armco Buildings.



◀ Comfortable, neat, easy-to-maintain Armco Building functions as a motor car house and lineman's building.

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Subsidiary of ARMCO STEEL CORPORATION

OTHER SUBSIDIARIES AND DIVISIONS: Armco Division • Sheffield Division • The National Supply Company
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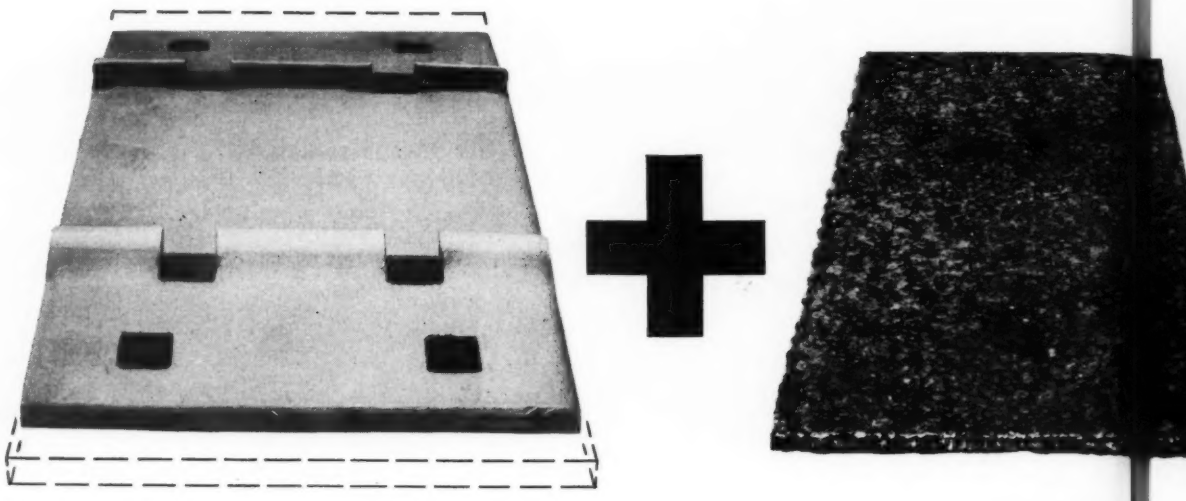


(SMALLER TIE PLATES) (RACOR TIE PADS)

Here's how you can save $1,320 or more on every mile of track re-laid

Are you short of funds for M/W upgrading? If your present rail relaying plans call for larger tie plates, we urge you to seriously consider using your *present* plates with Racor® tie pads. You will get far better tie protection, and you will save money, too. New large quantity discounts on top-quality Racor tie pads now make out-of-face installations economically sound. The accompanying table shows how big some of these savings can be!

Do you have usable tie plates on hand? If you have a stock of smaller tie plates which you have "outgrown", you can upgrade them by several sizes through the use of Racor tie pads.

As the A.R.E.A. test at London, Kentucky, shows, small tie plates *plus* proper tie pad protection equal longer tie life, elimination of plate cutting, and far lower track maintenance costs. Experience indicates that a reduction of one, two or even three inches in plate size may be practical under many conditions. Thus it is often possible to effect very substantial savings while realizing the many benefits of Racor tie pad protection.

Do you want to reduce future M/W expenses? The new low quantity prices on Racor tie pads now make out-of-face installation of tie pads economically feasible in a great many heavy traffic main line locations. In an effort to reduce plate cutting and the resulting higher costs for maintaining main line track in top condition, many roads are considering larger or heavier tie plates. By providing better tie protection and lower maintenance requirements, Racor tie pads at their new low prices provide a more economical alternative.

To help you take full advantage of these new quantity prices on Racor tie pads, your American Brake Shoe representative will be glad to go over your situation with you and prepare a comprehensive cost analysis for your evaluation. For full details consult American Brake Shoe Company, Railroad Products Division, 530 Fifth Avenue, New York 36, New York.

(IMPORTANT INITIAL SAVINGS)

TYPICAL EXAMPLES OF SAVINGS, DOLLARS PER MILE*

WITH 115 POUND RAIL:			WITH 132 OR 133 POUND RAIL:		
USING THIS SIZE TIE PLATE AND RACOR TIE PAD	INSTEAD OF THIS SIZE TIE PLATE ALONE	SAVES YOU THIS MUCH PER MILE	USING THIS SIZE TIE PLATE AND RACOR TIE PAD	INSTEAD OF THIS SIZE TIE PLATE ALONE	SAVES YOU THIS MUCH PER MILE
No. 4 11" Light	No. 7 13" Heavy	$1,320	No. 9 12" Light	No. 12 14" Heavy	$1,360
No. 4 11" Light	No. 8 14" Ex. Hvy.	2,795	No. 9 12" Light	No. 13 14¾" Ex. Hvy.	2,260
No. 4 11" Light	No. 20 15" Heavy	4,795	No. 9 12" Light	No. 21 16" Heavy	4,965
No. 6 12" Medium	No. 7 13" Heavy	40	No. 10 13" Medium	No. 13 14¾" Ex. Hvy.	843
No. 6 12" Medium	No. 8 14" Ex. Hvy.	1,510	No. 10 13" Medium	No. 21 16" Heavy	3,543
No. 6 12" Medium	No. 20 15" Heavy	3,490	No. 11 13" Medium	No. 13 14¾" Ex. Hvy.	593
No. 7 13" Heavy	No. 20 15" Heavy	1,793	No. 11 13" Medium	No. 21 16" Heavy	3,293
No. 8 14" Ex. Hvy.	No. 20 15" Heavy	193	No. 12 14" Heavy	No. 21 16" Heavy	1,813

**Tie pad prices based on quantities required for ten miles of track. Tie plate prices F.O.B. mill for 7¾" sizes.*

A-2989

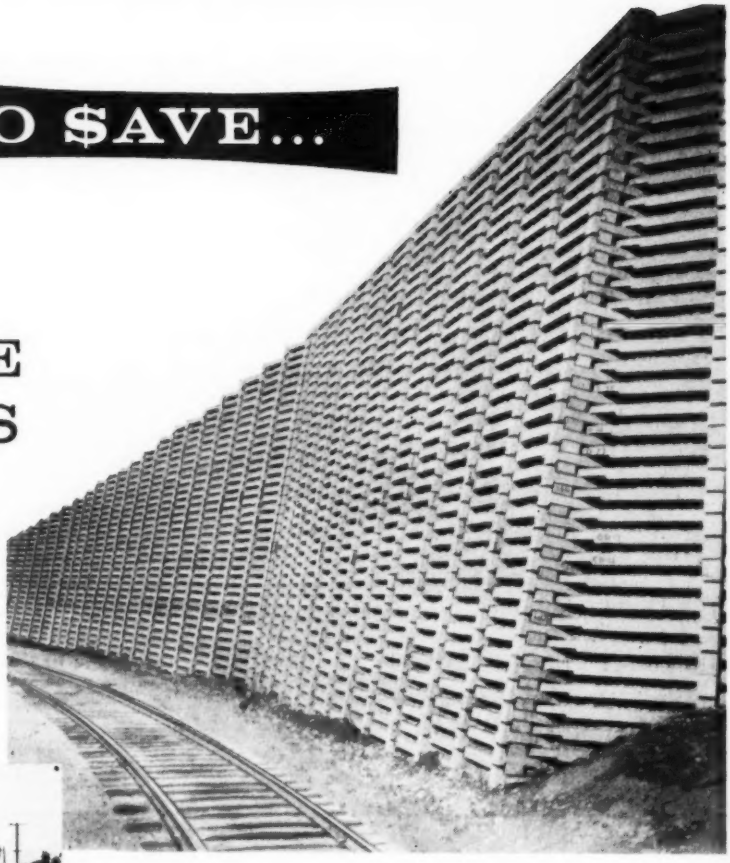
Quality products cut your ton-mile costs

AMERICAN Brake Shoe COMPANY

3 WAYS TO $AVE...

with

PRECAST CONCRETE PRODUCTS



CRIBBING

Concrete crib walls, because of their economy and adaptability, are the permanent answer to most retaining wall problems. Architecturally pleasing too.

PRESTRESSED RAILROAD BRIDGES

Precast maintenance-free Amdek bridge beams are made under factory controlled conditions, delivered on schedule, erected quickly with minimum traffic tie-up.

CULVERT PIPE

Concrete culvert pipe is permanent. Available in the shape, size and strength required. Has superior hydraulic properties.

AMERICAN-MARIETTA COMPANY
CONCRETE PRODUCTS DIVISION
GENERAL OFFICES:
AMERICAN-MARIETTA BUILDING
101 EAST ONTARIO STREET, CHICAGO 11, ILLINOIS, PHONE: WHITEHALL 4-5600

Nothing Else Like It!

CAMPCARS *save you money on housing traveling work crews*

Illustrated ECONOMY 21 CAMPCAR

Complete 2-Man Living Unit

MORRISON - INTERNATIONAL

Campcars

BUILT BY RAILROAD PEOPLE WHO KNOW RAILROAD NEEDS

Now In Use On 21 Railroads

CAMPCARS are available in a variety of floor arrangements from a one-car, complete, 2-man living unit to an entire setup of dormitories, kitchen and dining units, recreational and office space—to accommodate crews of 20 and more men. Find out how CAMPCARS can serve you—economically, efficiently. Write for detailed information.

INTERNATIONAL CAR DIVISION

MORRISON-INTERNATIONAL CORP.

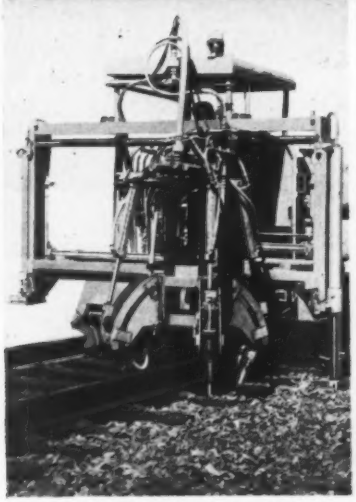
1435 Bailey Avenue - Buffalo 12, N. Y. Shops - Kenton, Ohio

Visit CAMPCAR COLISEUM SPACES 18N - 19N - 20N *Chicago Exhibit, September 14-17*

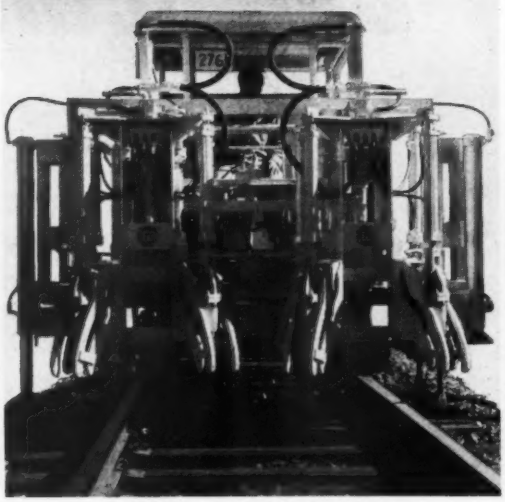
IN TRACK MAINTENANCE . . .

These Jobs* are Done Best *by* RMC MACHINES

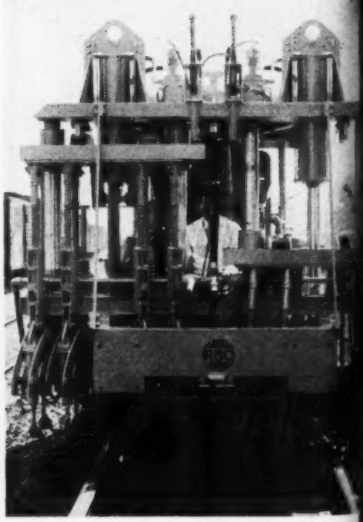
* TIE TAMPING



McWILLIAMS SPOT TAMPER
Big-tamper ballast compaction for smoothing, spot surfacing, yard and terminal maintenance.

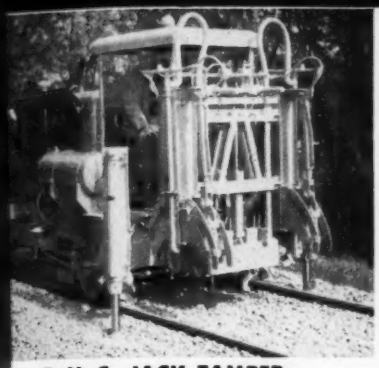


McWILLIAMS MULTI-PURPOSE 8
This is the world's most versatile tamper — a production tamper, a spot tamper, a jack tamper.



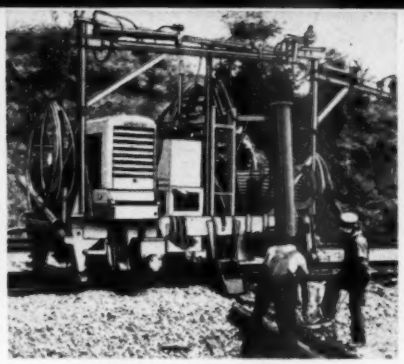
McWILLIAMS PRODUCTION TAMPER
Will finish tamp any raise up to 6" at speeds up to 720' per hour.

* JACK TAMPING * TIE REPLACING * TIE SPACING



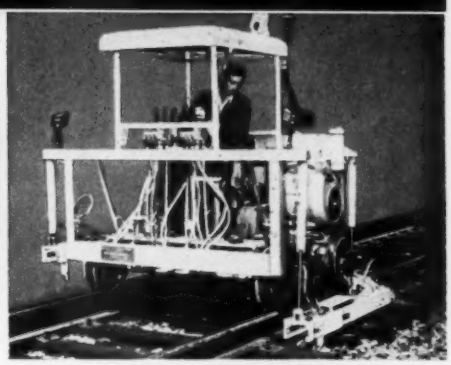
R. M. C. JACK TAMPER

Only machine that will raise and tamp track . . . and hold established grade, keeping ahead of one or two production tampers.



R.M.C. TIEMASTER

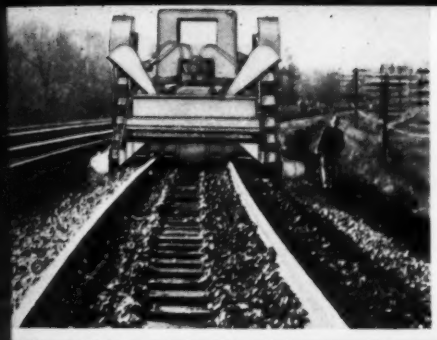
Replaces ties at a rate of approximately one per minute with three men, with minimum track disturbance.



R.M.C. TIE SPACER

Corrects poor tie spacing and slewed tie conditions by means of two hydraulic shifting devices.

* DISTRIBUTING BALLAST * CLEANING BALLAST



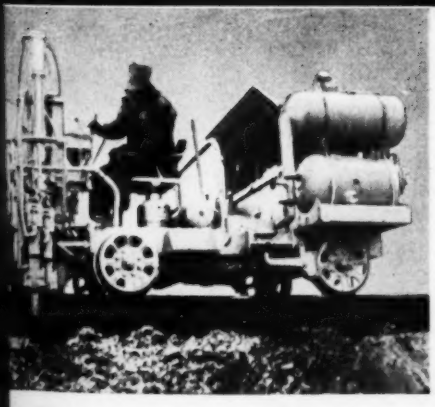
McWILLIAMS BALLAST DISTRIBUTOR

Places ballast in desired quantity in exactly the proper position for tamping, shaping shoulder and inner-track space.

McWILLIAMS SUPER MOLE

Cleans or excavates shoulder ballast at speeds up to 2400' per hour.

* DRIVING SPIKES * LINING TRACK

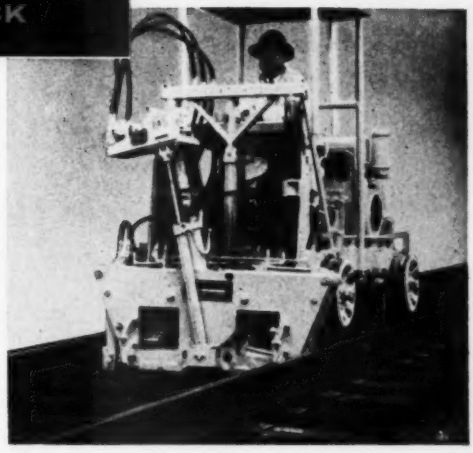


R.M.C. SPIKEMASTER

Nips up the tie and drives four spikes, one on each side of both rails. Speed: better than six ties per minute.

R.M.C. LINEMASTER

Lines over 6000 feet of track per day, using an operator and one man sighting. Wheel-mounted and crawler mounted models.



Trial and LEASE Plans

Railway Maintenance Corporation

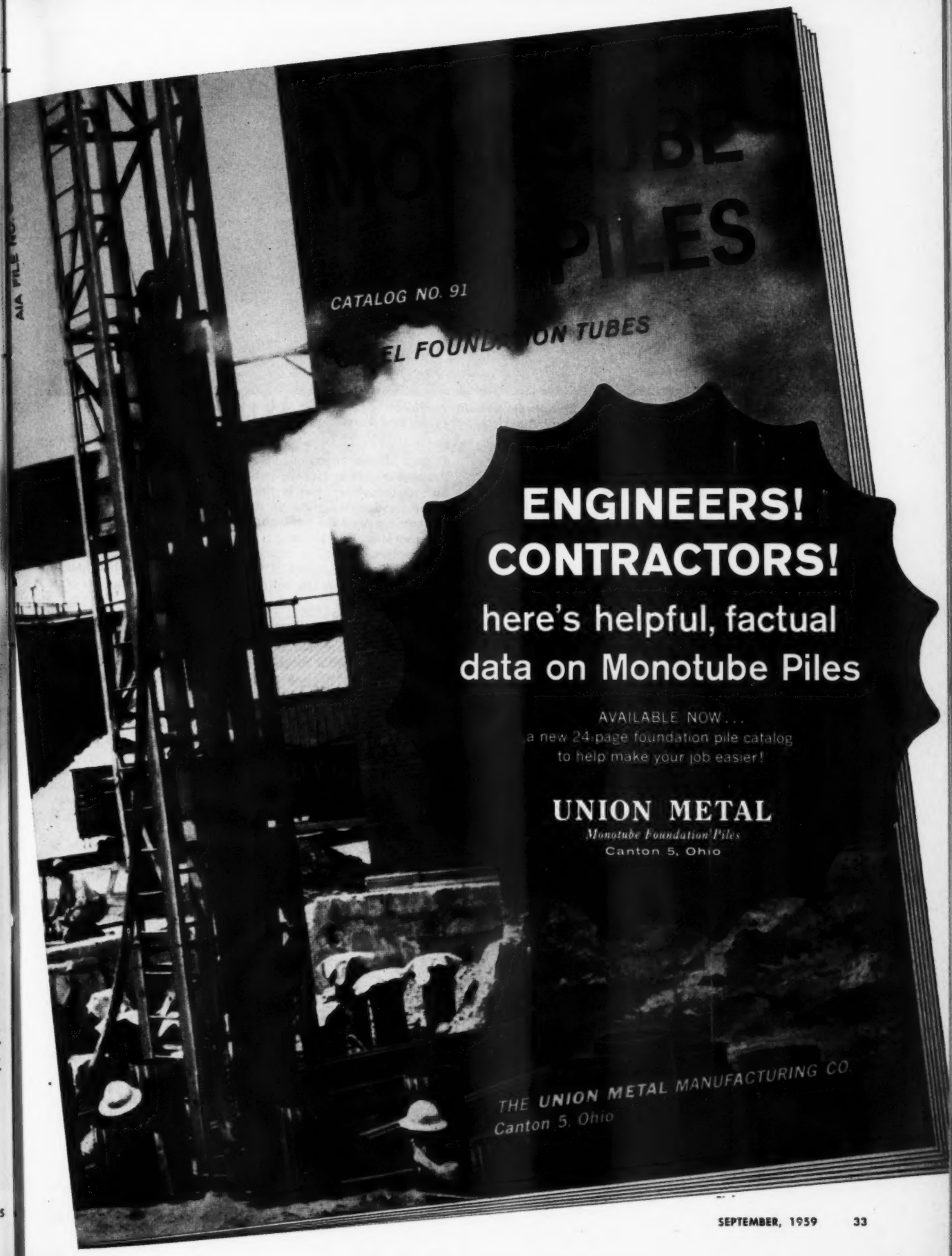
PITTSBURGH 30, PA.

These 4 bags will effectively treat one acre against the emergence of weeds and grasses...

Soil Sterilant—the **new proven** dry type weed and grass killer. It's non-poisonous . . . light . . . ready to apply . . . easy to apply . . . economical.

THE R. H. BOGLE CO.
ALEXANDRIA, VA.

JACKSONVILLE, FLA. **MEMPHIS, TENN.**


CATALOG NO. 91
ENGINEERS!
CONTRACTORS!
here's helpful, factual
data on Monotube Piles
AVAILABLE NOW...
a new 24-page foundation pile catalog
to help make your job easier!
UNION METAL
Monotube Foundation Piles
Canton 5, Ohio
THE UNION METAL MANUFACTURING CO.
Canton 5, Ohio

Five years ago, Matisa introduced the first production-line rail welding equipment to America for tests with American rail and under the tremendous battering of American schedules and heavier axle loads. The results are embodied in this report on . . .

Welded Rail:

A Four Year Progress Report

The story of welded rail goes back many years. Early experiments were abandoned as tedious and costly. Then, Matisa Equipment Corporation began making safe, cheap welds fast.

With this head start, the Matisa story has since been inseparable from the story of every advance made in the welding of rail.

MATISA RAILWELD, INC.
1020 Washington Ave., Chicago Heights, Illinois

It took Matisa a year of testing and re-building the equipment brought over from Europe to finally produce safe welds quickly and inexpensively; but in the following years, improved techniques and redesigning of the original equipment definitely indicated a need for basic changes in the original design, to be incorporated by the manufacturer. Matisa requested these improvements, but for reasons which they could well understand, the manufacturer of the old original flash butt welder decided not to alter the entire design for a small segment of its market.

Improvements Built into New Machine

Matisa then submitted designs to other manufacturers and made arrangements to produce flash butt rail welding with equipment incorporating all the improvements developed in 4 years of actual on-track welding.

This is the equipment with which Matisa will be establishing new horizons during the year—but already, with re-built equipment, Matisa has at the present time 140,000 welds in track, with a history of no weld failures.

Now known as *Matisa Flash Thoroweld*, the process is comprised of refined techniques and a re-engineered plant which are today efficient beyond that of any equipment available.

Today's Performance

For example, recent improvements have tripled the life of grinding wheels; truly efficient adaption for the use of commercial power is now available; elimination of mechanical shearing devices has not only made a safe weld safer, but has stepped up production by 25%, and required personnel has been reduced. **The present operation produces almost twice as many welds per man hour as any other known method or equipment.**

Three years ago, Matisa had perfected production-line techniques to the point of producing 80 welds per 8-hour shift; today, Matisa has produced 186 welds per shift—and has produced 356 welds in 20 hours. These are peak performances, but the equipment *consistently averages* well over 100 welds per shift.

New Developments Here Now

The Matisa program continues. Matisa recently opened its' first Fixed Location Welding Plant at Summit, Ill.—smaller roads with not enough welds to warrant leasing equipment will benefit along with larger roads who can avoid tying up scarce operating capital.

Watch for opening of other fixed location welding plants.

PROGRESS REPORT

SPENO

Here are the up-to-date facts on the SPENO Ballast Cleaning and the SPENO Rail Grinding Services.

BALLAST CLEANING

SPENO Engineering and Research has developed a superior screening arrangement so that we are now using an improved Ballast Cleaner with greater efficiency.

RAIL GRINDING

Our Rail Grinding Service has been so well received we are now building a *THIRD* Rail Grinding Train to take care of the increased demand.

SPENO is constantly developing means for better service to make sure that the Railroads receive everything they pay for — and more

Just Ask the Railroads That have used us!

RAILROAD PROGRESS INSTITUTE MEMBER

FRANK SPENO RAILROAD BALLAST CLEANING CO., INC.

Clark Street
East Syracuse, N. Y.

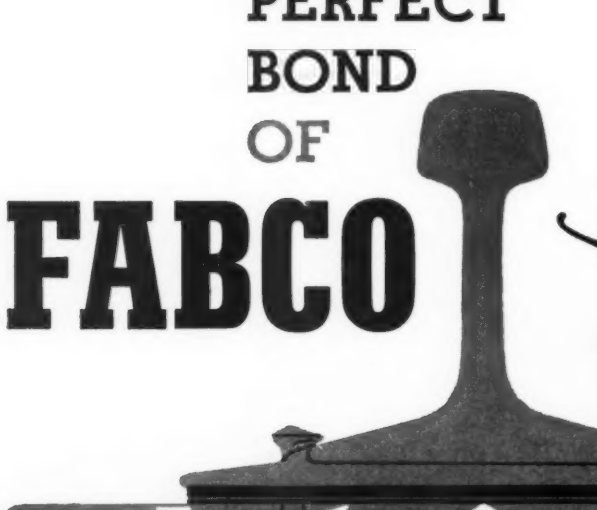
306 North Cayuga St.
Ithaca, N. Y.

TIME
'N
TRAFFIC
ONLY
TIGHTEN
THE
PERFECT
BOND
OF

FABCO

Super Seal TIE PADS

Beginning in 1957 a Master Binder was added which gives super-excellent adhesion between the pad and the asphalt seal. Now this asphalt seal itself has been made twice as thick as when it was first introduced . . .



TIGHT AS A DRUM *. . . tough as Rhino Hide these Fabco Super Sealers dramatically extend tie life . . . year after year help cut M/W costs to the bone.*

Recommended for use on curves, switches, bridges, critical grades, tangent track, station and station approach tracks . . . and at other points where mechanical wear of tie plate on the tie get rough and tough.

. . . These superior improvements and advantages . . . **plus** the proven prime bond between a **Fabco Tie Pad** and the tie . . . **Plus** the proven long life of all **Fabco Tie Pads,** make **FABCO Super-Seal TIE PADS** the best that money can buy, and at no added cost to the buyer!

Send for the "Inside Story" of FABCO Super-Seal Tie Pads

FABREEKA PRODUCTS CO., Inc.

1190 ADAMS STREET, BOSTON 24, MASS.

NEW YORK • DETROIT • SKOKIE, ILL. • MILWAUKEE • PHILADELPHIA • PITTSBURGH • CLEVELAND • CINCINNATI • LONG BEACH • OAKLAND • PORTLAND, ORE.
IN CANADA: International Equipment Co., Ltd., Royal Bank Building, Montreal

September is convention month

The events:

- ▶ Convention of Roadmasters' and Maintenance of Way Assn.
- ▶ Convention of American Railway Bridge & Building Assn.
- ▶ Exhibition by Association of Track & Structure Suppliers
- ▶ Meetings of various committees of the AREA

. . . To take place, with related activities, at Chicago, September, 13-17

● Maintenance of way and structures officers attending the events scheduled to take place at Chicago during the week of September 14 will have a choice of a wide range of activities. The problem for each man attending will be to work out a schedule for himself designed to meet his particular needs and interests.

The information on this and the following two pages is designed to be helpful in working out these individual schedules. Reference to the column at the right will quickly reveal in a general way the events under way at any given time during the five-day period September 13-17. Detail programs of the joint and separate sessions of the two conventions will be found by turning the page, as will the list of exhibitors, along with a floor plan of the exhibit hall.

Meetings of AREA committees

This year 14 committees of the American Railway Engineering Association have scheduled meetings to be held at the Conrad Hilton Hotel during the Roadmasters' and Bridge & Building conventions. These committees, together with the dates, times and places of the meetings, are:

Committee	Date	Time	Room
Roadway & Ballast	9-14	9:30 am to 5:00 pm	PDR 1
	9-15	9:30 am to 12:00 noon	PDR 1
Rail	9-16	9:30 am to 1:00 pm	PDR 4
Track	9-16	9:00 am to 5:00 pm	PDR 2
Subcommittee 2	9-14	9:00 am to 12:00 noon	PDR 8
Subcommittee 3	9-15	9:00 am to 12:00 noon	PDR 12
Buildings	9-16	9:00 am to 5:00 pm	Rm. 521
Masonry	9-16	9:00 am to 5:00 pm	PDR 19
	9-17	9:00 am to 5:00 pm	PDR 19
Highways	9-16	9:00 am to 5:00 pm	PDR 13
Engineering & Val.	9-16	9:00 am to 5:00 pm	PDR 14
Records	9-17	9:00 am to 5:00 pm	PDR 14
Yards & Terminals	9-14	9:00 am to 5:00 pm	PDR 19
	9-15	9:00 am to 5:00 pm	PDR 19
Economics of Ry. Location & Oper.	9-14	9:00 am to 5:00 pm	PDR 12
Contract Forms	9-16	9:00 am to 5:00 pm	PDR 18
	9-17	9:00 am to 5:00 pm	PDR 18
Eco. of Ry. Lab.	9-14	1:30 pm to 5:00 pm	PDR 4
Waterways & Harbors	9-16	9:30 am to 5:00 pm	PDR 20
Maintenance of Way	9-15	9:00 am to 5:00 pm	PDR 3
Work Equip.	9-16	9:00 am to 12:00 noon	L'w'r. T'w'r.
Cont. Weld. Rail	9-14	1:30 pm to 5:00 pm	PDR 18
Clearances	9-16	9:30 am to 5:00 pm	PDR 10

Handy capsule guide . . .

. . . A quick look at the over-all picture

- **Sunday, September 13**
  - 10:00 am—12 noon—Executive Committee meeting, Roadmasters' Association, Conrad Hilton Hotel
  - 2:30 pm—5:00 pm—Executive Committee meeting, B&B Association, Conrad Hilton Hotel
  - 1:30 pm—5:00 pm—Convention registration, Astoria room, Conrad Hilton Hotel
- **Monday**
  - 9:00 am—5:00 pm—Exhibit open at Coliseum
  - 8:30 am—5:00 pm—Convention registration, Astoria Room
  - AREA committee meetings (see box at left)
- **Tuesday**
  - 10:00 am—12 noon—Joint opening session of Roadmasters' and Bridge & Building conventions
  - 2:00 pm—Separate sessions both associations
  - 9:00 am—5:00 pm—Exhibit open at Coliseum
  - AREA committee meetings
- **Wednesday**
  - 9:30 am—12 noon—Separate sessions both associations
  - 9:00 am—4:00 pm—Exhibit open at Coliseum
  - (To allow maximum time for inspection of exhibits no convention sessions scheduled for Wednesday afternoon.)
  - AREA committee meetings
  - 6:30 pm—Annual banquet sponsored by Association of Track & Structure Suppliers
- **Thursday**
  - 9:30 am—12 noon—Separate and final sessions both associations
  - 9:00 am—12:00 noon—Exhibit open at Coliseum
  - 12:00 noon—Executive Committee meetings, both associations
  - AREA committee meetings
  - (No convention activities scheduled for Thursday pm)

Detailed programs and list of exhibitors ▶

Events at Chicago to feature addresses, reports,

PROGRAMS *of the Roadmasters' and Bridge & Building conventions*

Joint activities

Tuesday morning, September 15

(Williford Room; Conrad Hilton Hotel)

10:00 am—Invocation by Dr. Kenneth Hildebrand, pastor, Central Church, Chicago
Welcome by presidents of Roadmasters' and Bridge & Building Associations
Greetings from Frank R. Woolford, president, American Railway Engineering Association
Greetings from President A. J. Reading of Association of Track & Structure Suppliers
Remarks by Lewis Thomas, executive secretary and director of exhibits, ATSS

10:30 am—Address on The Supervisor's Role in the Future of Railroads, by D. J. Russell, president, Southern Pacific, San Francisco, Calif.

11:10 am—Address on How to Cope With Present-Day Maintenance Problems, by C. J. Henry, chief engineer, Pennsylvania, Philadelphia, Pa.

Wednesday evening

(Grand Ballroom)

6:30 pm—Annual banquet sponsored by Association of Track & Structure Suppliers for members and families of both associations. (Informal dress.)

Roadmasters' Sessions

(Williford Room)

Tuesday afternoon

2:00 pm—Address by President C. E. Neal

2:20 pm—Recognition of past presidents by Past President E. L. Anderson

2:30 pm—Report of Committee on Necrology by Chairman J. E. Shaw

2:40 pm—Presentation of honorary membership

2:50 pm—Report of Committee on Cycle Tie Renewals—Advantages and Disadvantages—G. M. Strawhun, chairman (division engineer, Missouri Pacific, Little Rock, Ark.)

3:15 pm—Report of Standing Committee No. 1—Machinery for Maintenance of Way Work—N. E. Smith, chairman (principal assistant engineer, Milwaukee Road, Chicago)

3:30 pm—Report of Committee on Modern Methods of Constructing New Tracks—C. A. Hagen, chairman (supervisor of track, Illinois Central, Memphis, Tenn.)

4:00 pm—Adjourn

Wednesday morning

9:30 am—Report on Committee on Importance of Rail Anchoring—W. E. Fuhr, chairman (assistant chief engineer, signals & communications, Milwaukee Road, Chicago)

10:00 am—Report of Committee on Cost Studies and How They Are Used—R. R. Gunderson, chairman (engineer maintenance of way, Western Maryland, Baltimore, Md.)

10:45 am—Report of Standing Committee No. 2—Track—W. E. Chapman, chairman (chief engineer maintenance, Central of Georgia, Savannah, Ga.)

11:00 am—Report of Committee on Rental Versus Purchase of Maintenance of Way Work Equipment—E. W. Smith, chairman (assistant to chief engineer, St. Louis-San Francisco, Springfield, Mo.)

11:35 am—Adjourn

Wednesday afternoon

(No session scheduled—time available to inspect exhibits at Coliseum.)

Thursday morning

9:30 am—Report of Standing Committee No. 3—Roadway—F. N. Beighley, chairman (roadway engineer, St. Louis-San Francisco, Springfield, Mo.)

10:05 am—Report of Committee on Improved Branch Line Maintenance Practices—A. D. Henninger, chairman (general roadmaster, Minneapolis, St. Paul & Sault Ste. Marie, Minneapolis, Minn.)

10:45 am—Business session
Election and Installation of Officers

11:20 am—Adjourn

Bridge & Building Sessions

(Beverly Room)

Tuesday afternoon

2:00 pm—Address by President M. H. Dick

2:15 pm—Recognition of past presidents

2:30 pm—Report of Committee on Effect of Preventative Maintenance on Work Equipment—R. H. Miller, chairman (maintenance engineer, Lake Superior & Ishpeming, Marquette, Mich.)

3:15 pm—Report of Committee on Recent Developments in Fire Protection Methods—R. D. Hellweg, chairman (assistant regional engineer, Gulf, Mobile & Ohio, Bloomington, Ill.)

3:45 pm—Motion picture entitled "The First Five Minutes," courtesy of the National Board of Fire Underwriters, which depicts the principles of pre-planning for fire control, and latest fire extinguishing techniques

4:30 pm—Adjourn

Wednesday morning

9:30 am—Report of Committee on New Materials for Buildings—F. W. Hutcheson, chairman (supervisor B&B, Chesapeake & Ohio, Newport News, Va.

10:15 am—Report of Committee on Material and Methods for Extending the Life of Existing Structures—J. F. Warrenfells, Jr., chairman (chief engineer, Jacksonville Terminal Co., Jacksonville, Fla.)

10:45 am—B&B Maintenance on the Santa Fe—Inspection, Programming and Mechanization—Discussion led by C. H. Sandberg, bridge engineer system, AT&SF, assisted by W. I. Wilson, F. E. Schneider and W. R. Hyma, all assistant engineers in the Santa Fe bridge department

12:00 noon—Adjourn

Wednesday afternoon

(No session scheduled—time available to inspect exhibits at Coliseum.)

Thursday morning

9:30 am—Report of Committee on Contracting Work in the B&B Department—W. W. Caines, chairman (supervisor B&B, Chesapeake & Ohio, Huntington, W.Va.)

10:00 am—Report of Committee on Use of Highway-Railway Equipment by B&B Forces—A. W. Carlson, chairman (engineer of bridges and structures, Western Pacific, San Francisco, Calif.)

10:40 am—Business Session
Election and Installation of Officers

11:30 am—Adjourn

plus huge display of equipment and materials

EXHIBITION *of the Association of Track and Structure Suppliers*

WHERE: At the Coliseum, 1513 So. Wabash, Chicago.

WHEN: Monday, September 14, 9:00 am to 5:00 pm; Tuesday, 9:00 am to 5:00 pm; Wednesday, 9:00 am to 4:00 pm; Thursday, 9:00 am to 12 noon.

Any of the 112 exhibitors may be quickly located by noting the booth numbers in the list and then referring to the floor plan.

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American Concrete Crosstie Corporation; 180
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Arcair Company; B-N
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Binks Manufacturing Company; 17-N
Bird & Son, Inc.; 22-24
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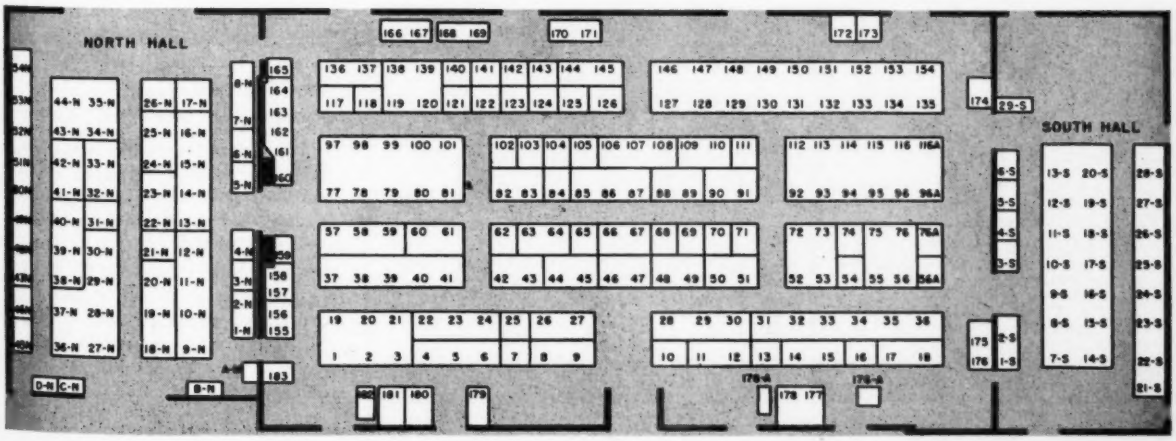
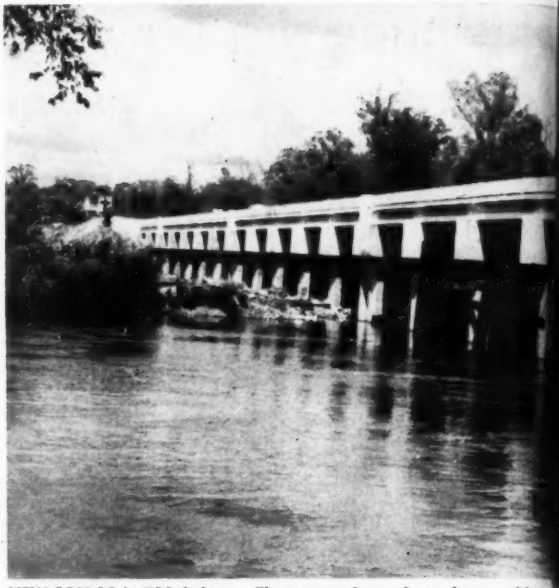


Concrete trestle has prestressed deck slabs, piles

When the ACL found it necessary recently to replace its bridge across the Salkehatchie river near Yemassee, S. C., consisting mostly of timber-trestle approaches, it made some studies that resulted in a momentous decision. The decision was to build a ballast-deck concrete bridge with prestressed slabs and piles.



NEW BRIDGE is 703 ft long. That part of trestle under northbou

By **W. N. Downey**, Engineer Bridges, Atlantic Coast Line

FRAMED between two of the concrete piles, the author (right) is seen here with George S. Atkins, resident engineer.
Photo by Leo P. Nicholson, Portland Cement Assn.

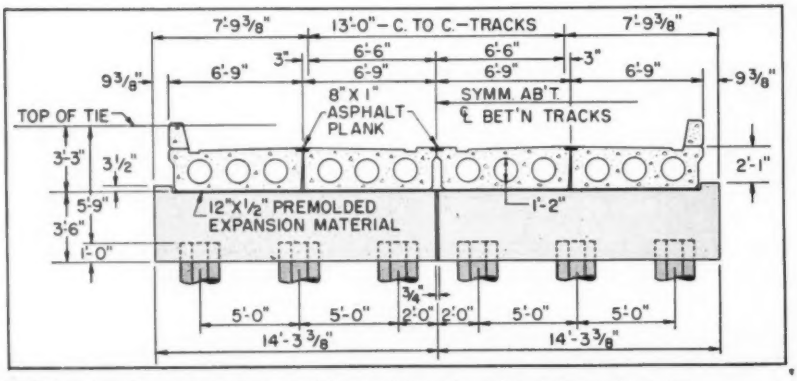
● The Atlantic Coast Line is currently constructing the first major concrete-slab ballast-deck trestle of prestressed concrete to be built in the United States, and possibly in the world, for railroad traffic.*

The bridge is being built across the Salkehatchie river, near Yemassee, S.C., and will replace a 46-ft double-track deck plate-girder span and 650 ft of double-track creosoted timber ballast-deck trestle approaches. The timber trestle had reached the end of its useful service life and the railroad, in keeping with a policy of upgrading its property to reduce future maintenance, decided to make the replacement with a concrete structure. The new double-track bridge is 703 ft long.

Timber trestle bents on the Coast Line are spaced 10 ft center to center and this spacing influenced the selection of length for the prestressed slabs, since, to avoid interference with the old bents, a span length of some multiple of 10 ft is indicated. Comparative estimates showed that the most satisfactory span length would be approximately 20 ft overall, considering both the need for maximum economy and the necessity of handling the slabs for placement with presently owned 75-ton locomotive cranes. The actual slab length adopted was 19 ft 6 in overall to allow for construction of a double anchor bent at intervals of 100 ft.

The decision to use the prestressed-slab design was made only after extensive studies of comparative designs and cost estimates. The railroad had previously used prestressed concrete piles and they had proved so much superior to conventionally reinforced

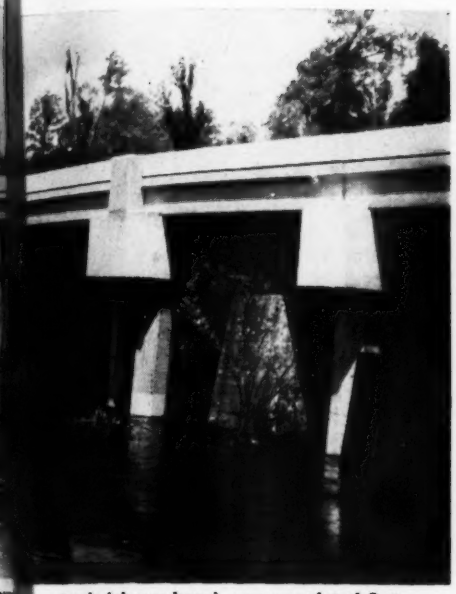
*See accompanying announcement relative to prestressed concrete trestle also now under construction on the Western Pacific.



DECK has four lines of prestressed slabs. Inside and outside slabs are identical.

WP also building prestressed concrete trestle

Simultaneously with construction of the bridge described here the Western Pacific is building a somewhat smaller ballast-deck concrete trestle with prestressed stringers and piles. In an article next month, Frank R. Woolford, chief engineer of the WP, will describe this bridge and tell why the particular design was selected. Editor.



track (shown here) was completed first.

PILE-DRIVING operations are shown nearing completion on northbound portion of bridge.

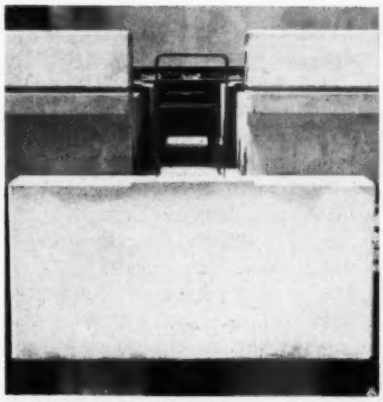
piles that their use has been adopted as standard. Not only are the prestressed piles cheaper in first cost but important advantages in handling for driving are also realized, due to their toughness and crack-free characteristics. It is conservatively estimated that the use of prestressed slabs and piles resulted in a saving of approximately $60,000 for this bridge alone.

The studies that were made in determining the slab design included not only various prestress arrangements but conventional reinforced concrete designs as well. It became obvious early in the studies that the thin sections usually associated with prestress design are uneconomical for short slabs carrying a high ratio of live load to dead load such as are encountered in slabs under railroad loadings. The design adopted further utilized the advantages of cored holes in the concrete to cut down the weight of the slab and to reduce the amount of prestressing steel needed by decreasing the area of concrete to be prestressed.

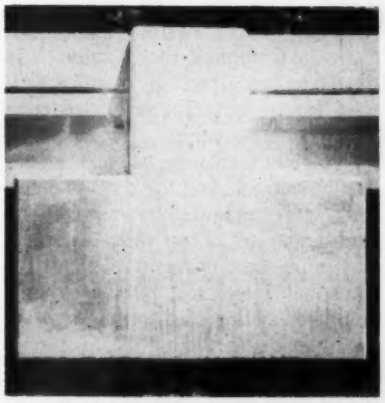
Each slab is thoroughly tied together and reinforced for shear with mild steel bars. Prestressed curbs for outside slabs are cast separately and anchored to the slab dowels, with the bond between slab and curb broken with mastic to avoid the high curb stresses which would attend monolithic construction. Slab details were designed to permit casting of both the inside slabs and the outside slabs with the same forms.

The prestressing force produced

DECK SLABS in position on part of northbound trestle, with others stored on new deck in background. Note plant at left for mixing all field concrete.

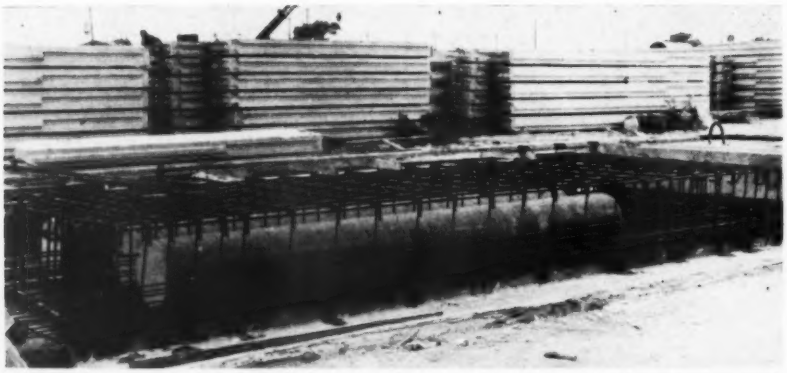


DOUBLE BENTS for anchorage were placed 100 ft apart. These two views . . .

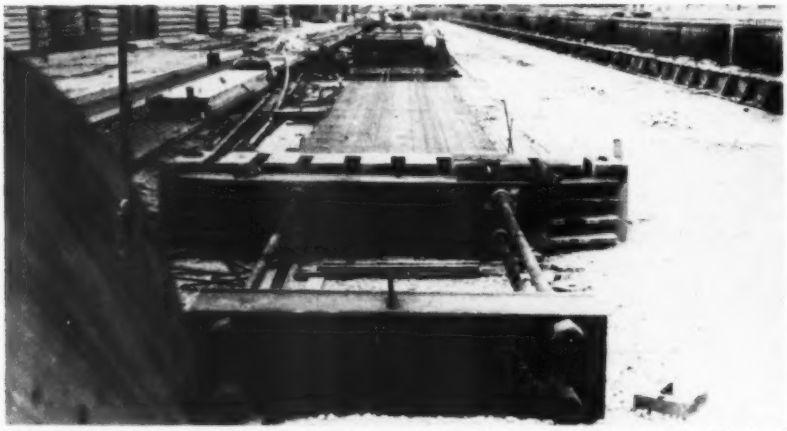


. . . Show one before and after the part between the deck slabs had been poured.

Prestressed concrete trestle cont'd



DECK SLABS were cast on a single bed 304-ft long. Only three sets of forms were used, which were moved ahead as needed. This view shows reinforcing steel for one slab.



BULKHEAD at end of slab-casting bed for tensioning the prestressing strands. Work of placing forms for individual slabs can be seen underway in background.

positive camber in the slabs varying from ⅛ in to ⅜ in. The difference in camber was due largely to the difference in the age of the concrete at the time the prestressing force was applied.

The piles were manufactured by the Hardaway Contracting Company, Columbus, Ga., at its casting yard at Port Tampa, Fla. The slabs were manufactured by the Florida Prestressed Concrete Company, Inc., Tampa. The trestle is being built by regular railroad forces including a bridge gang and a concrete gang.

Sufficient lead time between award of the contracts and the date of delivery of the piles and slabs was given the contractors to allow them to make maximum reuse of forms. To cast the octagonal piles, the pile contractor modified existing steel forms for 24-in square piles by filleting the form corners. By using four casting beds, each 421 ft long, he easily completed casting all the piles well ahead of schedule.

The slab contractor was able to construct all slabs on one 304-ft bed, using only three sets of steel forms which were moved ahead as soon as the concrete had hardened sufficiently to permit form removal. Thus 15 slabs were cast for each strand-tensioning operation.

The Law Engineering Testing Company, Atlanta, Ga., was engaged to inspect all tensioning and concreting operations and to check concrete strength by breaking test cylinders. The specifications required a concrete strength of 5,000 psi at 28 days and 4,000 psi at time of stress release. Actually, the 28-day strength ranged from 6,500 psi to 7,000 psi. This was brought about by the builder's need for early strength of 4,000 psi for form release.

For economy in constructing the double-track structure, one track at a time was taken out of service until the new trestle on that side could be completed and traffic diverted to it. The southerly half of the bridge is constructed on a spiral curve to fit a slight line revision which was made to improve alinement south of the bridge.

The piles were driven with a Warrington-Vulcan OR hammer to a template built at deck level. However, they were first jetted almost to a firm sand stratum on which they took up at practical refusal under the hammer.

Prefabricated plywood panel forms were used in building the concrete caps. Form panels were built for four intermediate caps and one double cap. With this number of forms it was possible to keep the cap concreting up with the pile driving. High-early-strength cement was used to permit early form removal and early diversion of traffic to the new trestle.

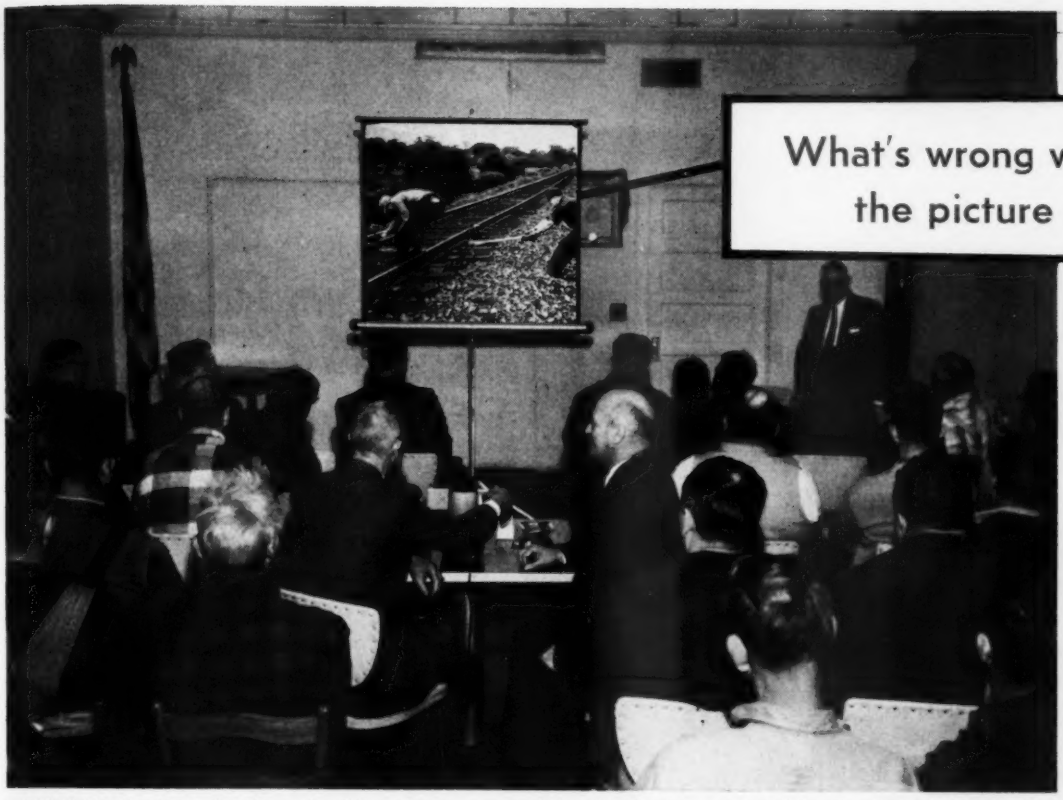
All field concrete was poured from a central mixing plant erected on the bank of the river. This plant consisted of aggregate bins with batching scales, a 16S concrete mixer and a 160 Rex Pumpcrete machine with 6-in pipe. The use of the Pumpcrete machine permitted uninterrupted placing of concrete and eliminated interference with the pile-driving operations. Maximum pumping distance was approximately 450 ft.

Aggregate piles and concrete plant were arranged for handling of aggregate and cement to the the mixer platform with a 10B crawler crane spotted between the piles. Bagged cement was stored in a box car close by on the dead track. From the box cars the cement was loaded on pallets on track push cars, then handled from push cars to mixer platform by the crawler crane.

Slabs for the northbound track arrived at the job when slightly over half the caps had been poured. Approximately one-half the slabs were set from the cars into permanent location and the remaining slabs were stored on them, to be set as caps became available. The 75-ton locomotive crane used for setting the slabs occupied the operated track for this work.

Work began at the bridge site on April 27, 1959. The new northbound trestle was completed and traffic diverted to it July 22. It is expected that the southbound trestle will be completed by November 1.

The designs and plans were prepared in the office of the engineer of bridges, which department also carried out the construction. The entire project was carried out under the general direction of L. E. Bates, chief engineer.



VIOLATIONS of safety rules shown by slide on screen are explained by Mr. Rossman (at right of projector) during safety meeting. Man in right background is H. J. Weccheider, engineer maintenance of way of Erie's Western District.

New idea adds zest to safety

Safety meetings—usually dull and uninteresting—are now lively affairs on the Erie. And M/W officers of the road are convinced the safety message is being told with greater effect than ever before.

Main reason for this state of affairs is the use of colored slides, posed by Erie employees, showing violations of safety rules and errors in judgment. Employees at the meetings, which now include men from the ranks, vie with each other in pointing out the unsafe practices.

● Can you imagine a safety meeting where everyone follows the proceedings with rapt attention? And where the response of the audience is eager and spontaneous, with even the shiest persons present volunteering comments and expressing ideas?

In view of past experience most maintenance men will not find it easy to conceive of a safety meeting with these characteristics. But such meetings can be held. They *are* being held by the maintenance-of-way and structures department of the Erie. They have resulted, say top maintenance officers of this road, from the adoption of a revolutionary new format for such meetings, which is aimed at stimulating audience response and participation.

The idea behind the new format is basically simple. It involves the use of photographic color slides to depict unsafe practices. The use of color slides is, in itself, a means of attracting and holding attention. But what is more important in getting audience response is the challenge to detect and explain the unsafe practices. Perhaps there is also the element of competition in trying to be first to point out what's wrong with the pictures.

But this isn't all. A second important innovation in the safety meetings now being held on the Erie is the participation in them of all levels of personnel, including trackmen, signal helpers, etc. As a result it is felt not only that the safety message is being told more effectively but also that for the first time it is reaching the rank and file of the employees with full effect.

The new approach to safety instruction was born in the mind of Louis Rossman, division engineer of the Allegany-Meadville division at Salamanca, N. Y.

On these pages are reproduced sample slides from the Erie's safety presentation. The captions, taken from the loose-leaf book used by the "teacher" during safety meetings, indicate what's wrong.

(1) Using spike maul as striking tool.
(2) Not using goggles.
(3) Employee facing operation.
(4) Employee holding chisel in danger of being struck on head.

(1) View of moving cars obstructed by plank on shoulder.
(2) Tripping hazard cannot be avoided.
(Plank should be carried at one side under the arm.)

Slides show

Mr. Rossman had become dissatisfied with the existing method of safety instruction being used at the annual safety meetings held on each division. These meetings were conducted by the division engineer and held at various central locations on the division. The practice was for all branches of the maintenance-of-way department to be represented by track foremen, assistant track foremen, signal foremen, foremen of maintainers, carpenter foremen, leading carpenters, carpenters, plumber foremen, leading plumbers and plumbers, equipment operators, and communications personnel. The object was to instruct and indoctrinate key personnel in safety in the hope they would carry the message to the rank and file employees.

The format of these meetings, says Mr. Rossman, was the same year after year. The division engineer did practically all the talking. Accidents occurring during the preceding year were discussed and the more important rules in the Safety Book of Rules and the Rules and Instructions Governing the Use and Operation of Motor Cars were reviewed. Here's how Mr. Rossman describes the atmosphere that prevailed at these meetings:

"The men attending the meetings during the winter months came dressed in their usual out-door clothing. After a time the room became hot, stuffy and full of smoke, and in a short time the attention of the men began to wander. Furthermore, they were reluctant to participate in any discussions. They were shy and uncomfortable before a group. Their answers to questions were generally given in as few words as possible."

After a series of such meetings Mr. Rossman became convinced, in March 1958, that the meetings were not achieving the desired results. He felt that the lessons being taught were not reaching all levels, "that even the men attending the meetings had no lasting recollection of the discussions." The hope that these men would carry the safety message to the rank and file was, he concluded, "more wishful than realistic."

It was then that Mr. Rossman conceived the idea of using colored slides as a means of capturing the interest of the men and promoting audience participation. With the approval and encouragement of his immediate superior, Harry J. Weccheider, engineer maintenance of way of the road's Western District at Youngstown, Ohio, he called his staff together to lay the groundwork for the project.

This staff consisted of the assistant division engineer, four track supervisors, the master carpenter and several supervisors of communications and signals. Mr. Rossman recalls that he was fortunate in having four men on his staff who owned first-class camera equipment, namely, Assistant Division Engineer L. Martorell and Track Supervisors W. A. Scribner, Cuba, N. Y., L. E. Rodgers, Salamanca, N. Y., and P. W. Scribner, Jamestown, N. Y.

(1) Men working on one main track with train passing on other main track.
(Man holding broom illustrates method of pulling spike to prevent head from flying.)

(1) Operating motor car and push car over turnout side of spring frog.
(Violates rule that reads: "Track cars must be stopped and hand pushed over the spring rail side of frogs and through self-guarded frogs.")

safety-rule violations or errors in judgment

The subjects selected for photographing were chosen only after thorough investigation. In this work a study was made of all accidents that had occurred on the entire district during the past few years. The staff also scrutinized the Safety Book of Rules and the road's latest edition of its Rules and Instructions Governing the Use and Operation of Motor Cars."

As ideas for photographs were developed from these studies they were listed and the manner in which each subject was to be posed was outlined. To these were added other ideas contributed by the staff. Seventy-two subjects were finally selected for photographing. These were divided equally between the four men with the photographic equipment and the work of taking the pictures got underway.

When a series of pictures had been taken they were brought into Mr. Rossman's office for review. High standards were set for the content and quality. Pictures were retaken if they did not portray the desired point naturally and convincingly or if the photograph itself was imperfect.

What the slides show

The work of photographing the 72 subjects was completed in September 1958. At least half of these deal with subject matter of direct interest to all men under the supervision of the division engineer. This includes track men, bridge and building employees, signalmen, welders and men engaged in equipment maintenance. The remainder of the photographs each portray a subject of interest to only one of these groups.

Thirty-four of the slides each illustrate a single violation of the safety rules. In nine others there are two such violations, in three there are three, and in one there are four. Twenty-five of the pictures indicate errors in judgment or violations of special instructions previously issued, with no actual rule being violated.

Following completion of the photographic work the next step was to assign numbers to the slides. Then a loose-leaf book was prepared for the use of the "teacher" when conducting a safety meeting. Each slide is represented by a page in the book with a corresponding number. On this page is described the violation (or violations if there are more than one). On it is also indicated by number the particular rule or rules being violated, if any.

Two previews of the safety slides were held. The first took place in the division engineer's office at Salamanca before members of the bridge and structure inspection party. The response was described by Mr. Rossman as "enthusiastic and favorable." The second preview was held in Mr. Weccheider's office at Youngstown before all the division engineers of the Western District. Following this meeting minor changes were made in the wording of some of the pages in the guide book.

The presentation was then ready for its first real test—a bonafide safety meeting. Gowanda, N. Y., was selected as the site of this meeting. For

(1) Reaching out while on ladder unsafe.
(2) Firm hold on ladder impossible with paint bucket in hand.

(1) Ladder at too steep an angle. (Correct position shown at right.)
(2) Should not climb up or down ladder unless both hands are free.
(3) No non-skid shoes at foot of ladder. (Non-skid shoes shown on ladder at right.)
(4) Ladder placed in front of doorway with no one watching.

New idea adds zest to safety cont'd

the first time the personnel attending the meeting included not only supervision but also trackmen and helpers, signal and carpenter helpers and equipment operators. These men were invited because they are considered to be the "foundation of the safety movement," and hence it is vital that they know and understand the safety rules. Since it was desired to hold this meeting in a large well-ventilated room, the city hall at Gowanda was engaged for the purpose.

"The enthusiastic and excited response," says Mr. Rossman, "was startling. Men who previously had been reluctant to participate in any discussion were insistent on pointing out mistakes and dangers in the posed pictures." Through unobtrusive prodding by the teacher, he added, the men entered into discussions which were considered to be instructive to all those present.

Three additional showings of the slides were held on Mr. Rossman's territory with equal success. In fact the earlier meetings resulted in so much favorable comment by those who had taken part in them that the final gathering of this series was attended by a number of retired employees, including a general roadmaster, a track supervisor and a track foreman. Also present at this meeting were both district engineers maintenance of way —Mr. Weccheider of the Western District and W. F. Petteys of the Eastern District—and a division engineer and his assistant from the Eastern District. The latter were Arthur Price and J. Kenneth Weikel, respectively, both of Hornell, N. Y.

With the effectiveness of the new instruction system demonstrated by these initial meetings a series of additional meetings was scheduled on both districts. The objective in arranging these meetings was to give every M/W employee an opportunity to attend and participate. An indication of the number and size of these meetings is given by the figures for the Western District. Four or five meetings were held on each division with the attendance ranging from 25 to 90 men. A total of 810 men attended the meetings held on this district.

Format for typical meeting

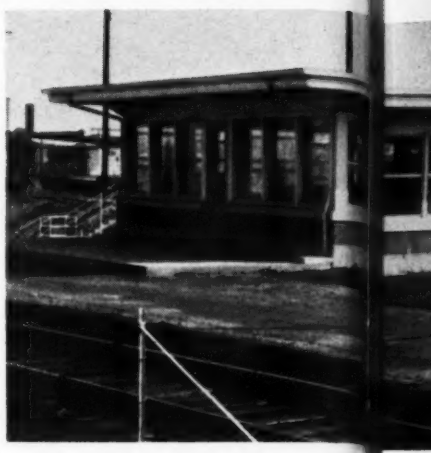
The meetings generally last about three hours. They are normally opened by the division engineer with a short talk on the new system of teaching safety. He may then discuss various aspects of the safety effort, including any special instructions that may have been issued during the year, a few of the more serious accidents that may have occurred recently, and perhaps the key rules governing the operation of motor cars. This portion of the program generally takes from 30 to 45 min.

The colored slides are then shown and discussed. This part of the program requires about two hours more or less, the exact time depending on the amount of discussion from the audience. In a typical meeting the projector is operated by a track supervisor and the division engineer acts as the teacher. Another track supervisor may sit next to the division engineer to suggest the names of men to be called on to point out the rule violations depicted by the various pictures. About midway through the showing of the slides the meeting is interrupted to allow the men a 10-min. smoking break.

As for the future it is thought that the colored-slide idea can be used year after year but that, to avoid repetition and maintain interest, it will be necessary to replace a considerable portion of the slides each year with new photographs. For example it is planned to take about 35 new pictures during the coming season. These, together with about 35 key pictures from the present set, will form the basis for meetings in 1960.

What the chief engineer thinks

"The favorable introduction of this medium for teaching safety certainly lends itself to our problem and should, as the men fully grasp the idea, result in fewer accidents and less lost time and distress to the men and their families." John S. Parsons, chief engineer, Erie.



"Fish-bowl"

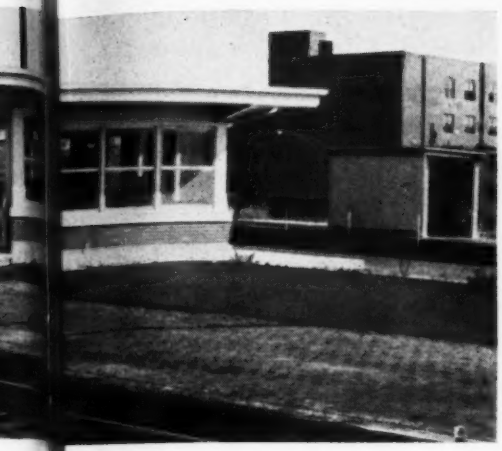
● Talk to the people on the North Western about vandalism and they know just what you mean. They, too, are having trouble with the willful destruction of railroad property, particularly in the Chicago area. That is why they developed an entirely different type of structure for the use of suburban patrons at some stations.

At Clybourn Junction, which is located three miles north of its Chicago passenger station, the North Western had a large brick and stone station which served passenger trains on both its Milwaukee and Wisconsin divisions. Since this station was built in 1899, the neighborhood has changed from residential to mostly industrial.

Damaged by vandals

The change in the neighborhood brought with it a wave of vandalism directed at the station. The greatest offenders were juveniles. Their objective seemed to be to break the windows as quickly as they were replaced. Because of the resulting loss of heat it became necessary to shut down the heating plant. Also, the toilet facilities were bent, broken or smashed so that these rooms had to be kept locked. Electrical fixtures were pulled out, both from the station building and from the pedestrian tunnel which connected the station stairway with adjacent streets. Also, lights on the station platforms were broken. Despite the policing of the premises, vandalism continued.

This station presented other prob-



NEW STATION, which replaces a brick and stone structure built in 1899, has continuous fenestration on all sides.

WINDOWS are of break-resistant Plexiglas. Other interior features include concrete floors and ceiling.

shelter aimed at keeping out vandals

The North Western's Clybourn station at Chicago, an old structure, was a victim of vandalism in its worst form. To solve the problem the railroad replaced the old building with a shelter in which all four walls are of clear Plexiglas so that the interior is completely visible from the outside. Another new feature: Electric radiant heating.

lems. It was a potential hazard to women. It was entirely too large for its present use. For the most part, it was used by riders to transfer from one division to the other. In addition, major repairs would soon be necessary to the roof, the plaster and the flooring. The decision was therefore made to raze the station and in its stead erect a type of structure which would serve patrons adequately and yet be as vandal proof as possible. In designing the structure the objective was to eliminate hiding places as much as possible and to afford a maximum amount of visibility of the interior and of the surrounding area.

A temporary frame building, 12 ft by 20 ft, was constructed and the old station was torn down. A part of the basement excavation of the old building, which served as a portion of the pedestrian tunnel connecting the passenger platforms of the two divisions, was retained. The pedestrian tunnel was opened up as much as possible to eliminate dark hideaways. A high-ground area was excavated to expose more of the premises to public view and a black-top driveway was constructed.

A new one-story enclosed shelter, 18 ft 8 in by 32 ft in size, was built just south of the old station site. It has a structural-steel frame and brick walls supported on a concrete foundation and a precast-concrete roof of Flexicore. The floor is of concrete which is insulated from a sand fill by 1-in Fiberglas.

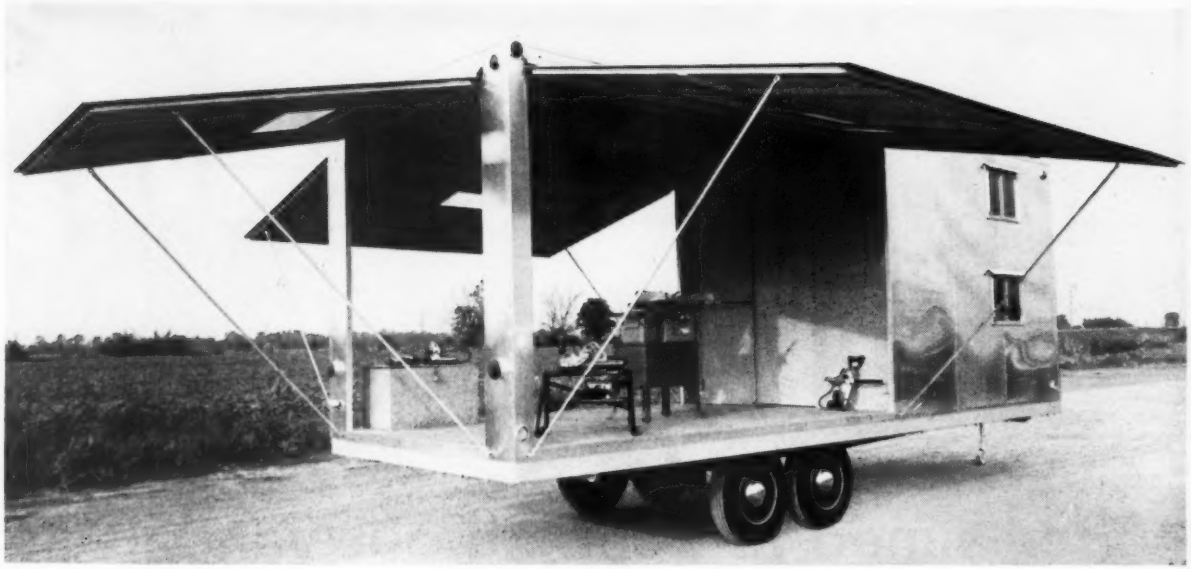
The structure has continuous fenestration on all four sides so that its entire interior can be seen from all directions, especially from the tracks, walks and an interlocking tower. As an experiment against stone throwing, the windows were made of clear Plexiglas. No toilet facilities are available to the public because these were put out of order in the old building and no requests for new facilities were made. It has a small ticket booth in one corner where a clerk is on duty in the afternoons only.

Another unusual feature of this building is an installation of electric radiant heating in the 7-in concrete floor. This is said to be the second installation of its kind in the Chicago area. It includes two 300-ft lengths of a special cable made by the General Cable Corporation which are coiled back and forth 3 in below the floor surface. The cable contains two 16-gauge copper wires embedded in a mineral insulation. The temperature is controlled by a thermostat placed within the clerk's booth.

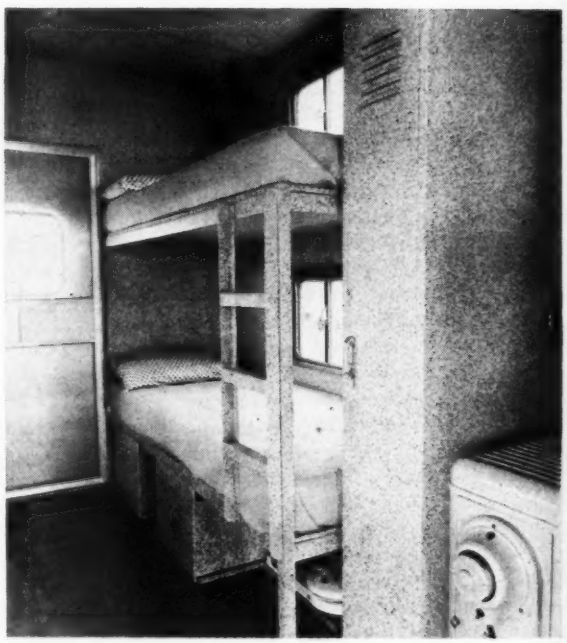
New canopies, of structural-steel and corrugated asbestos-cement board, were constructed on the island platforms of both the Wisconsin and Milwaukee divisions as windbreaks. Three new concrete stairways were constructed from the platforms to street and tunnel levels, and new sidewalks connect the parking area with the stairways. Concrete crib retaining walls were built to keep the embankment off the parking area.

Lighting, being so vulnerable to vandalism, received careful consideration. The old incandescent platform lights on posts were replaced by mercury-vapor lights placed on high timber poles. These light up the tracks, platforms, stairways, sidewalks and driveway. The lights in the tunnels and within the new shelter are fluorescent.

This new facility has not been in use long enough to determine how successful it will be in combatting vandalism. But the railroad is hopeful that this design will prove effective. Similar construction is being used at another critical point of vandalism—Fox River Grove—but no provision is being made there for a clerk or agent.



B & B trailer has shop at one end . . .



. . . Living quarters at the other

Carpenters and helpers on the Central of Georgia now live right on the job. This state of affairs is brought about by a new type of trailer that serves as a shop as well as a home. Thus, the trailer becomes the headquarters of the bridge and building crews, and it moves with them wherever they go.

"This is the most advanced of all our trailers, and we expect great things from it," said W. E. Chapman, chief engineer maintenance of the Central of Georgia.

Mr. Chapman was referring to the trailer illustrated on these pages. Designed specially for the use of the bridge and building forces it has a carpenter shop at one end and living and sleeping quarters for two men at the other. However, it is pointed out that four men can sleep comfortably in the trailer, two in the double-deck bunks in the living quarters and two others, if necessary, on roll-a-way beds in the work area. The latter area, it will be noted, has hinged sidewalls that may be propped open to enlarge the working space and to provide shelter beyond the confines of the shop itself.

Mr. Chapman points out that the road's division carpenters and helpers are assigned to headquarters on these trailers. At the end of each week the trailers are left at the point of work and the men return to that point on the following Monday at work time. "The force may work at two or three or more locations in a day and be at their headquarters at all times during the week," he adds.

All types of bridge and building work is done by the men using the trailers. The trailers, each with a two-ton stake-body truck, are assigned on a division basis. Three of them will be required to complete the road's requirements for this type of equipment, according to Mr. Chapman.

The idea for this type of trailer was conceived by Mr. Chapman. The first unit of the type has been in service several months, and it is understood that two additional trailers have now been delivered. All three of them were built by the International Car Division of Morrison-International Corporation, Buffalo, N.Y. This company has added the new trailer to its line of Campcars.

TRAILER looks like this with the sides and end of shop in lowered position.

EQUIPMENT provided in the shop includes a 24-ft aluminum extension ladder; a 6-ft aluminum step ladder (both stored overhead); a Delta combination 10-in tilting arbor saw and 6-in long bed jointer, powered with a 1½-hp single-phase motor; a 3-in Skil saw; a Skil orbital hand sander; a Stanley Sabre saw; a Model 75 ¼-in Skildrill; and a Model 123 ¾-in Skildrill—all powered by an Onan Model 5-CCK-1R generator.

Features of the trailers

The trailers the Central of Georgia has placed in the hands of its B&B forces have these features of design and construction:

Overall length from center of ball hitch to rear end of Campcar is 25 ft 4 in. Living quarters (inside dimensions) are 7 ft 6½ in wide and 9 ft long; shop is same width and 12 ft 8 in long. Height is 7 ft 5½ in throughout.

Chassis is of double-truss construction using 5½-in by 2-in rectangular steel tubing, with four longitudinal and 12 cross members.

Body is of 2-in by 4-in and 2-in by 6-in wood framing with .032-in aluminum exterior side and roof sheets. Sides, end and roof are insulated with fibre glass and aluminum foil blanket. The hinged side and end doors of work shop area have all-aluminum welded frame with exterior aluminum sheets riveted to framing.

Living quarters are equipped with aluminum, insulated combination door and screen door. All windows are of the crank-out type with screens. Living quarters and workshop are ventilated by ceiling fans.

Floor in the workshop is of 2-in by 6-in T&G oak bolted to the chassis. Floor in living quarters is ⅝-in plywood on 2-in by 2-in and 2-in by 4-in wood joists. Plywood is covered with floor tile.

Interior features of living quarters include a double bunk with inner-spring mattress, foot lockers under bunk, two clothes lockers, 30-gal table-top water heater, shower, 23,000 Btu space heater and combination sink, stove and refrigerator unit. Propane gas for hot water heater, space heater and cook stove is provided from two 60-lb dual-regulated cylinders mounted outside on forward end of trailer.

Water system is arranged for city water connection or from 110-gal storage tank mounted in ceiling of Campcar. A pump under the lower bunk maintains pressure in the water system when tank is used.

Trailer is mounted on four heavy-duty wheels with tandem axles and 7.00 by 15 eight-ply HD tires. Electric brakes are provided complete with wiring and controls for towing vehicle.

Outdoor receptacle provides for connection to 110-volt electric power. Current for interior lights, receptacles and refrigerator is furnished through a fused switch and distribution panel. The running lights, stop and directional lights and electric brake controls are operated from the towing vehicle through a six-way connector and plug mounted on the nose plate near towing hitch for convenience.

- Modern machines
- Advanced ideas
- Sharper organization

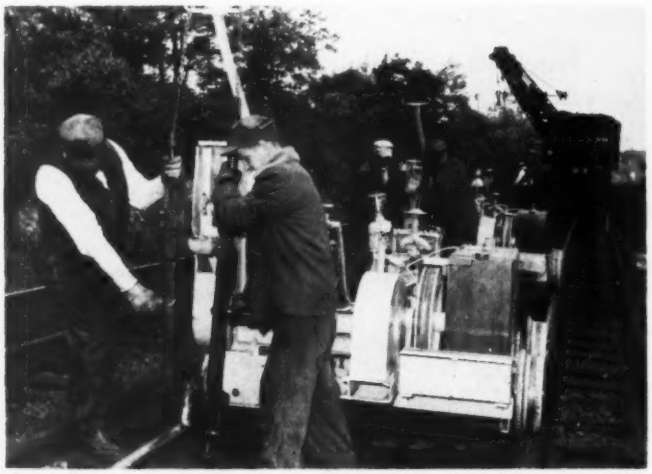
Cut rail-laying force one-third

In preparation for laying 35 track-miles of continuous welded rail this year the New Haven reorganized and re-equipped its rail-laying force. Result: A high-production force with less manpower.

● In the fall of 1958, the New Haven began experimenting with a new rail-laying organization and new equipment in preparation for laying strings of continuous welded rails in 1959. Through these tests, the road developed a gang with one-third less men than formerly required and one which it considers to be the most economical for its needs. "We could add more men and lay more rail per day," explained W. W. Chaffee, the road's general track supervisor, "but the cost per foot would go up."

The road has completed laying 35 track miles of 140-lb continuous welded rail this year on its eastbound No. 2 main track between New Haven, Conn., and a point three-quarters of a mile west of Noroton Heights. Each string of welded rail was comprised of 21 standard-length rails, although some shorter strings were made because of insulated-joint and turnout locations.

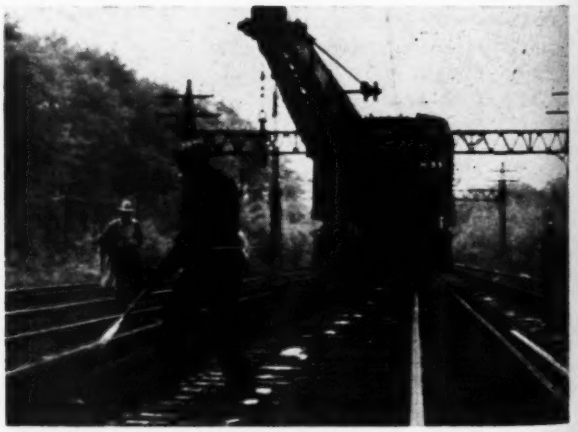
Each string of welded rail was assigned a number before it was welded or laid. The track was measured for the purpose of spotting each string, with an allowance of 37 ft between them for a mill-length rail. Because of the shrinkage in length during welding, a distance of 816 ft 6 in was used in laying out the long lengths in the field. The starting point of each string was painted, along with its assigned number, on the existing rails. Special rails, such



1 Spikes are removed by three self-propelled spike pullers, after which a crane lifts out the old rails.

2 Tie plates are removed from ties with a magnetic lifter. Behind, a man removes plates stuck to ties.

4 With pads and plates distributed, a pre-gager and Dun-Rite gager with Bronco position plates and peg every fourth one.



5 Threader on crane boom is used to lay welded rail. Man with broom sweeps wood chips and stones from new rail.

as are sometimes required in connection with rail lubricators, were welded in their proper positions in the rail strings.

The rails were unloaded during the winter of 1958-59 by local crews. The plates, anchors, spikes, bolts, bars, etc., were unloaded by a separate crew. The tie plates were shipped in open-top cars and were unloaded by a crane equipped with a magnet.

The 1959 rail-laying gang was organized during the week of April 13. It was comprised of the regular track forces with headquarters at Stamford, Conn., Bridgeport and New Haven and was augmented by extra-gang men obtained locally. All the men were transported by truck to and from the rail-laying site. They left their headquarters early enough to start laying rail at 6:30 am and, except for a half-hour lunch period, worked until 3 pm.

A practice which brought about considerable savings was in not turning the rail-laying equipment each day. The gang started laying rail on one side and carried that side on through until it was all laid. However, an exception was made at the start of the work when a change was made to permit a tie and surfacing gang to get started. The rail gang started at Devon, Conn., 10 miles west of

(Continued on page 54)

The complete organization, including equipment

Fore.	M.O., Other	Lab.	Operation	Equipment
	2		Remove nuts at joints	2 Race wrenches
1**		2	Remove nuts from rail clips	2 electric nutters
	1*	2	Heat treat receiving ends of new rail, torch cut stubborn nuts and bolts	Push car with welding equipment
1	1***	4	Place welded rail on rollers	Amer. H-57 crane
		1	Protect crane against trains	
	2		Mark centers on old rails (truck drivers used)	
		1	Remove bolts, joints, clips	
1	6		Pull Spikes	3 Nordberg Self-prop. Pullers
		1	Pull remainder of spikes	Clawbar
		1	Knock off old joint bars	
1	1***	3	Remove old rails	Koehring Rail-Aid
		1	Protect crane against trains	
		2	Remove old tie plates	Magnetic lifters
		2	Throw out small scrap	
1		7	Place and drive tie plugs	
		2	Drive down broken spikes	
	2		Crib, adze and apply penta	Kershaw Crib-Adze
		4	Distribute and apply tie pads	
1		7	Distribute, apply plates	
	2	3	Aline plates, drill and insert Dun-Rite gage plug every fourth tie	Nordberg Dun-Rite Gager with Nordberg Bronco
		1	Sweep wood chips and stones from new rail	
1	1***	2	Set rail strings on plates	Amer. H-55 crane
		1	Protect crane against trains	
		1	Position pads under plates	
1**	2	2	Distribute spikes, pick up rollers and bolt strings together	Nordberg Gandy and Race power wrench
	3		Bore ties for line spikes	3 Nordberg drills
	1	3	Place and set spikes	Racor Spike Setter
		1	Straighten crooked spikes	
1	2		Drive spikes	2 Racor Dual Spike Drivers
			Air power for spike drivers	I-R Compressor
		2	Finish spiking bent spikes	
1	1		Tamp low ties	Matisa tamper
1	2	5	Distribute, preset and apply rail anchors	2 True Temper applicators

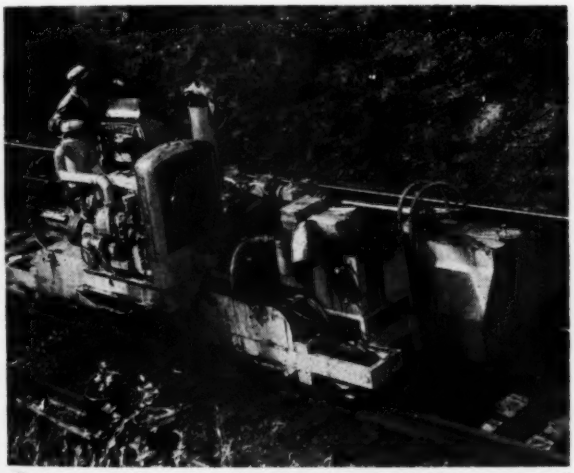
* Welder ** Asst. Foreman *** Crane Engineer

Miscellaneous

2 Truck drivers servicing equipment
3 Truck drivers—traffic warning flagmen
1 Timekeeper
1 Night watchman - protect equipment
1 Truck driver—spare tools and material
1 Truck driver assisting - drilling rail ends
9

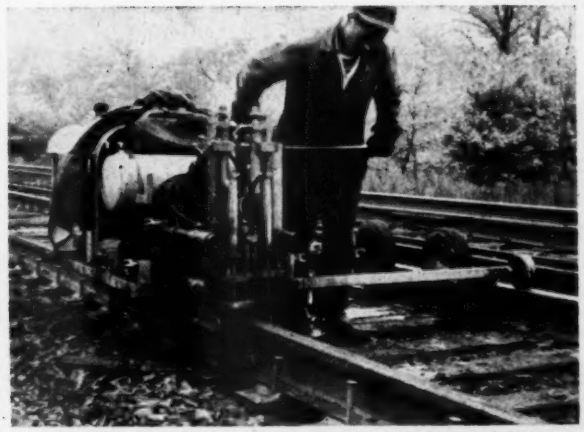
Summary

3 Crane engineers
9 Foremen
2 Asst. foremen
1 Welder
25 Machine operators
61 Laborers
9 Miscellaneous
110



3 One machine adzes the ties, sweeps tie-plate seats and applies pentachlorophenol to cut surfaces.

6 With new rail in place, tie pads are carefully positioned under plates, after which three tie drills bore spike holes.



7 When three men have stuck new spikes in holes of plates, a Racor dual spike setter is used to straighten and start them.

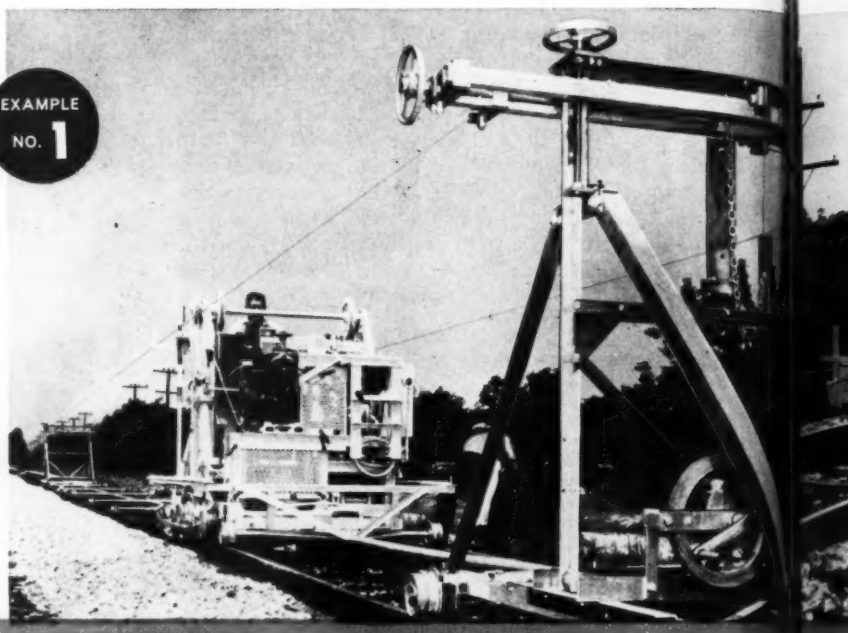
Driving spikes, applying anchors ▶

ORGANIZED MECHANIZATION

with NORDBERG MECHANICAL MUSCLES®

will give you MAXIMUM MAINTENANCE ECONOMY

EXAMPLE NO. 1

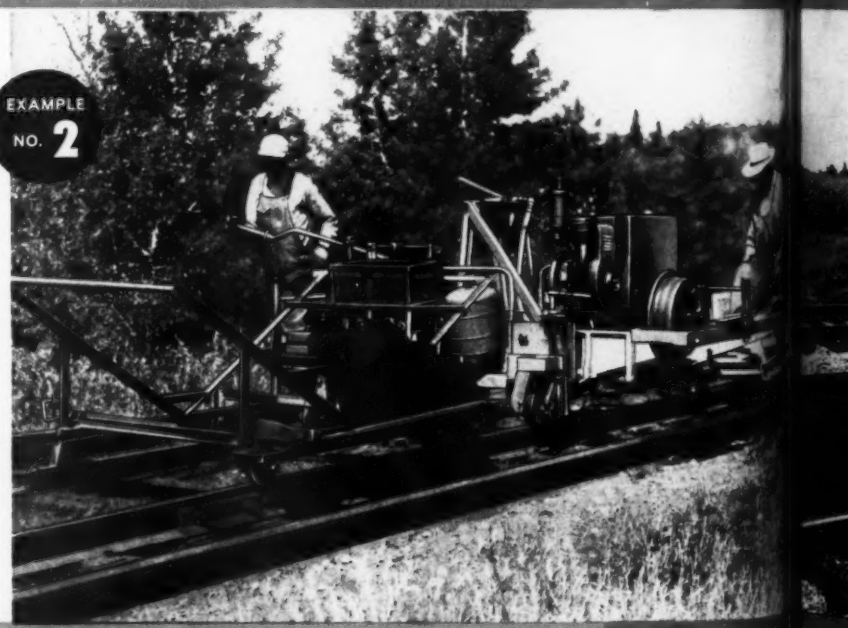


OUT-OF-FACE SURFACING AND SMOOTHIN'

In out-of-face surfacing, the Tamping Power Jack and Trak-Surfacer team raises track, tamps ties to hold the raise, and provides the necessary propulsion power. Here, the Trak-Surfacer uses a stretched wire 125 feet long to form a reference line for the top of the grade rail. Following right after, the Gang Tamper tamps all ties. Then the Trakliner® and Line Indicator line tangent and curve track.

In Smoothin' operations, the same basic Nordberg machines are used, except that the Trak-Surfacer uses a shortened wire 50 feet long.

EXAMPLE NO. 2



RELAYING OPERATIONS

The Dun-Rite® Gaging Machine and Bronco is the key machine, used with these other Nordberg units: Power Wrench, Self-Propelled Spike Puller, Ballast Router, Self-Propelled Adzing Machine, Rail Drill, Tie Drill and Spike Hammer, for completely mechanized relaying operations. Following close behind the adzing machines, the Dun-Rite anchors tie plates to the ties in exact position, so the head-to-head gage is correct. Speed and extremely accurate and uniform gaging are made possible with the Dun-Rite because tie plates are gaged before the rail is placed.

Write For LEASING Plans

See the NORDBERG EXHIBIT, featuring ORGANIZED MECHANIZATION, at the 1959 Track Maintenance Show, in the South Hall of the CHICAGO COLISEUM . . . or write for further information about Nordberg Mechanical Muscles to meet the challenge of today's maintenance problems.

■ ORGANIZED MECHANIZATION has two vital parts. First, providing the best combination of equipment to do a given job, and second, coordinating that equipment into an efficient working team.

The advantages of Organized Mechanization, utilizing Nordberg Mechanical Muscles include (1) Single source of responsibility for all machines; (2) Each machine is designed and built to work most efficiently with other Nordberg machines; (3) Maximum parts interchangeability between machines; and (4) Training of operators is easier and abilities are readily transferred to operate all machines built and backed by Nordberg.

Illustrated below are four examples of the way in which Nordberg Mechanical Muscles are used to make up Organized Mechanization teams to do specific maintenance jobs . . . to assure better, faster track maintenance work at the lowest cost.

EXAMPLE NO. 3

TIE RENEWAL

In this operation, the Nordberg Gandy® is one of the important machines used for reducing tie renewal costs. This efficient unit is used to pull out old ties, insert new ties, pile or load old ties, set machines on or off the track, distribute new ties, including hauling them to the work location. The Gandy is also a great money saver in bridge timber renewal. Other Nordberg machines used in this operation are the Hydraulic Spike Puller and Carriage, Tie Drill and Spike Hammer.

EXAMPLE NO. 4

BALLAST CLEANING OR WASTING

Three basic Nordberg machines are used to handle your ballast cleaning or wasting problems. (1) The Cribex®—to remove material from the cribs; (2) The Ballastex®—to excavate ballast between tracks or on shoulders and waste it or feed it to (3) The Screenex®—which takes fouled ballast from the Ballastex, screens it, and returns cleaned ballast to the track or shoulder in any desired proportions.

(View shows the Screenex in operation, close-coupled to, and being towed by, the Nordberg Ballastex.)

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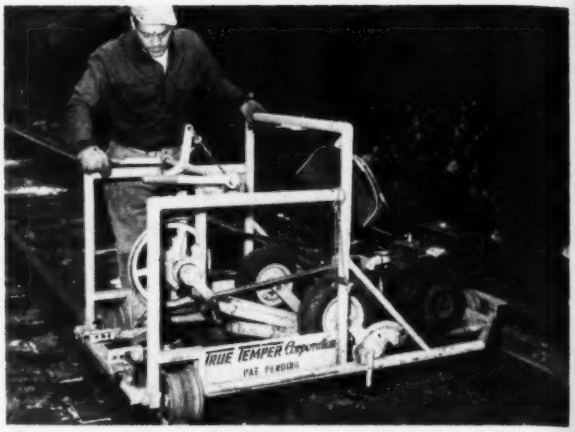
NORDBERG MANUFACTURING COMPANY • Milwaukee 1, Wisconsin

NORDBERG

Mechanical Muscles®

8 Operator of the leading Racor spike driver moves the push-car-mounted I-R compressor by remote control.



9 Last operation is the driving of previously set Bulldog rail anchors on the rail by two machines.

New Haven cuts rail-laying force one-third

(*Continued from page 51*)

the beginning of the relay project at New Haven, and laid the south rail easterly to Spring Street bridge at New Haven. The gang then crossed over to the north rail and, working west, laid that side to the end of the relay at Noroton Heights, Conn. The equipment was then switched to the south rail and the gang worked back to the starting point at Devon. The 70 miles of rail were laid in 27 working days.

On this project the New Haven's rail gang laid an average of 13,800 ft of rail per 8-hr day. This includes time lost, ranging from 55 min to 1 hr 40 min daily, while the gang stopped work during the passage of trains on other tracks. All trains were restricted to a speed of 30 mph while passing the rail gang.

The equipment used and the deposition of the men in the gang are shown in the accompanying table. Among the more noteworthy items is the road's practice of setting the strings of welded rail on rollers spaced about five standard rail lengths apart. This was done in curve territory for making it easier to move the strings, which were unloaded with gaps on the outside of curves and with laps on the inside because of the difference in length of rails on a curve. Strings on tangent track were jointed with a modified joint bar enabling the rail to be placed without interruption to the threading process.

Another noteworthy feature is the use of three Nordberg self-propelled spike pullers. With each of these units only two men are needed, one working on the inside of the rail and the other on the outside, instead of the three men per machine formerly required.

After the old rail, plates and spikes had been removed and tie plugs driven, the ties were adzed by an improved model of the Kershaw Crib-Adze. This unit is equipped with a cribbing brush, three adzing heads and a sprayer which applies preservative (in this case pentachlorophenol) to the newly adzed surfaces. With this machine, the two men who took turns operating it replaced 14 men formerly required. Bird tie pads then were applied to the prepared tie surfaces before placing the tie plates.

The services of two other men were saved by coupling the Dun-Rite gaging machine to the tie-plate template and using a Bronco for propelling both of these units.

To lay the rail, an American locomotive crane with a 50-ft boom was used. The boom was equipped with rail tongs and a rail threader. The tongs were used only when inserting the 37-ft rails and starting strings on curves into the threader. The threader was used for lifting, moving and laying the long strings in place. In this operation a man with a broom swept the rail free of adzed wood chips in advance of the threader and two men with lining bars guided the strings onto the tie-plate seats. The welded lengths were joined to the 37-ft lengths by six-hole joint bars fastened with 1⅛-in bolts.

Other newly developed equipment used with this gang included a Racor Dual Spike Setter. Three men preceded this machine, inserting the spikes in the line holes of the tie plates, after which the setter straightened and set the spikes with one blow each.

Behind the spike setter came two Racor Dual Spike Drivers. These units obtained their power from a track-mounted Ingersoll-Rand compressor placed between them. An unusual feature of this arrangement was a device on the leading spike driver by means of which the forward movement of the compressor could be started and stopped by remote control. By manipulating a lever on the handle of the spike driver, the operator could start an air motor on the compressor unit and cause that machine to advance and stop at will. A flag, draped over the front end of the air manifold of the compressor, served as a guide to the operator in controlling the movement of the compressor.

A Matisa production tamper followed for tightening all hanging ties and those ties on which no tie pads had as yet been applied because they had been marked for renewal.

In long-rail territory it is the New Haven's practice to box-anchor every other crib (not the ties). This pattern of anchorage, requiring 24 anchors per 39-ft length, is used throughout. In other words, the same number per rail is used at the middle of the welded string as at the ends. True Temper rail anchors were being used and they were being applied by two True Temper applicators.

The railroad hopes to lay welded rail on all tracks between New Haven and New York as funds become available. The released 131-lb rail is being cropped 18 in at each end and is welded into strings of 22 or 23 rails before relaying.

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WESTERN RAIL BENDER

...with Safety Cable

BENDS HEAVY RAIL COLD

Current refinements in the Rail Bender are examples of how WESTERN constantly improves its products to help track men do specific jobs *easier, surer, safer.*

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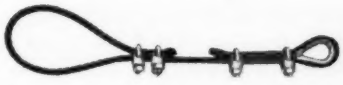
Greater speed, easier operation due to minimizing friction and less maintenance are direct, positive advantages of equipping both 25 and 35 ton special journal jacks with Timken roller bearings.

SAFETY CABLE



Made from preformed plow steel, this extra flexible hoisting cable with clamps protects operator from possible injury . . . prevents jack from slipping out of place under strain.

GRADUATED SCALE

Accurate duplication of bends is assured. Scale on jack ram (graduated by ¼") enables operator to match, degree-by-degree, the angle of each set of bends.

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IT'S A FAST JACK TAMPER: Jacking to reach and hold track raise and cross level is fast and positive. It quickly and firmly tamps tie to hold raise for production tampers . . . keeps out of their way . . . and it is adapted to existing track surfacing equipment.

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IT'S A VERSATILE TAMPER: Produces complete ballast consolidation in out-of-face raises . . . with maximum stability right under the rail — *the load bearing zone*. Replaces JACKSON MULTIPLE TAMPERS in moderate to high raise work. Ideal as an all-purpose production tamper for those requiring an all-purpose jacking-and-tamping machine. *See it at the show or write, wire or phone for complete details.*

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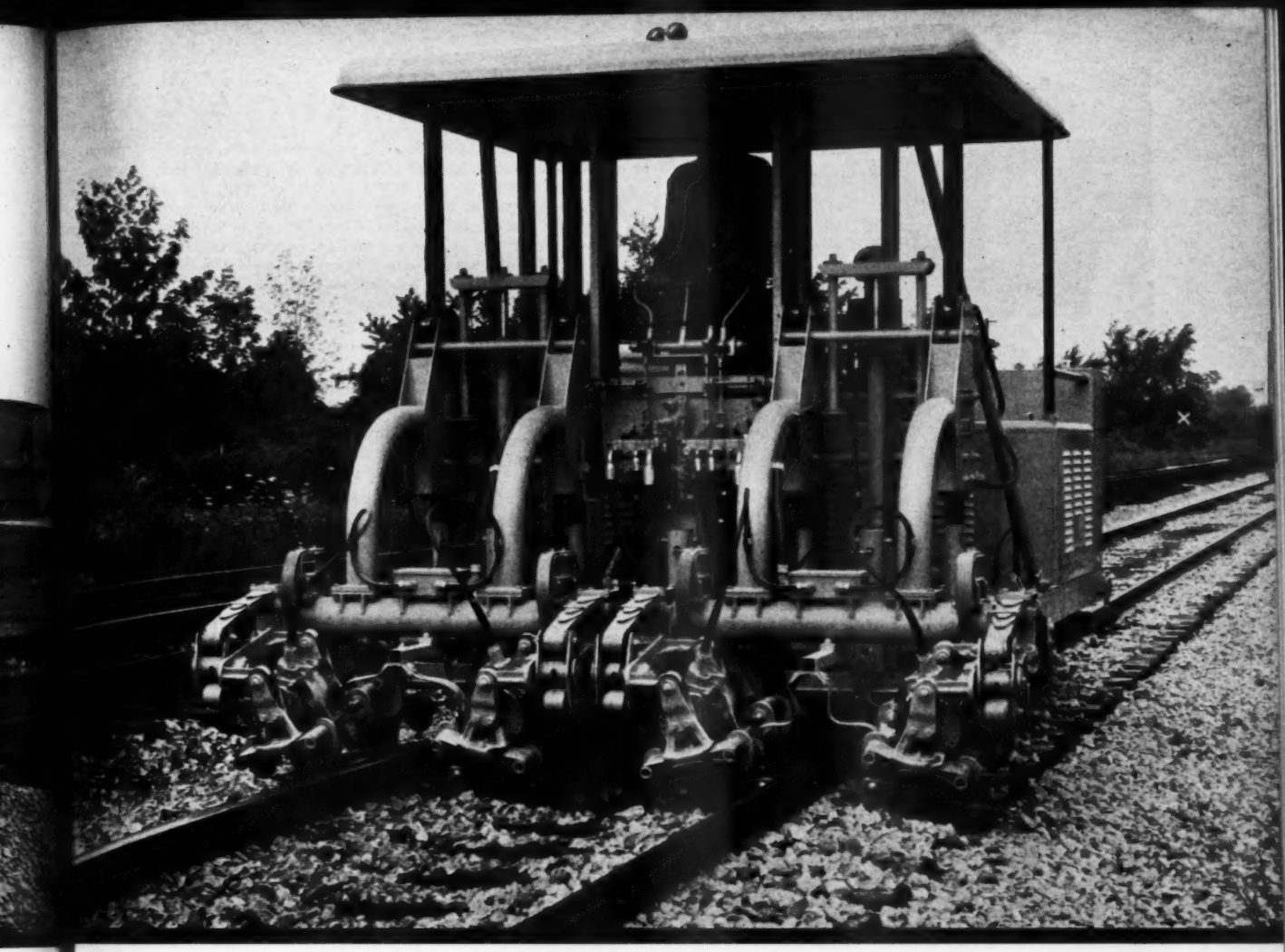
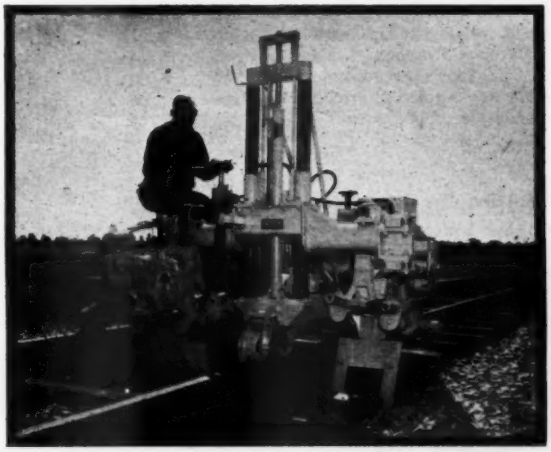


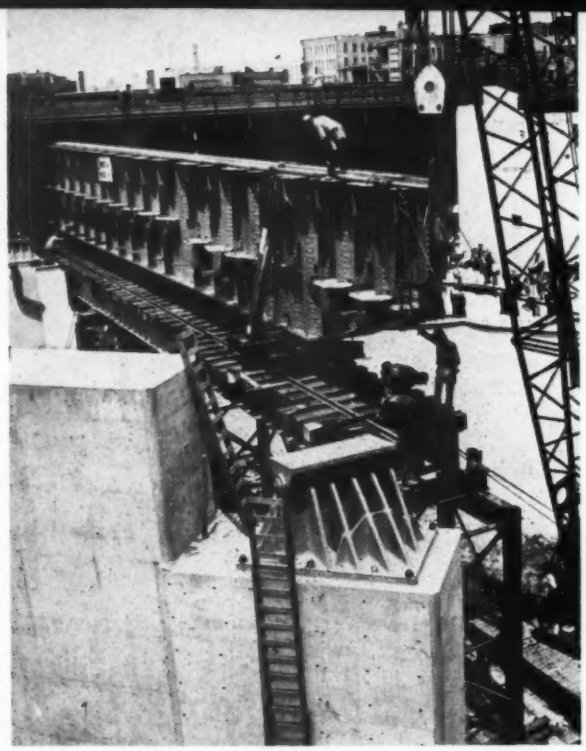
The 1960 JACKSON TRACK MAINTAINER

Don't miss the opportunity to inspect the faster 1960 Model of this production tamper which has won such overwhelming preference as the best, most economical means of both putting up and maintaining track of finest, longest-lasting quality. Write, wire or phone for the facts if you don't get them at the show.

The New JACKSON MONORAIL TAMPER

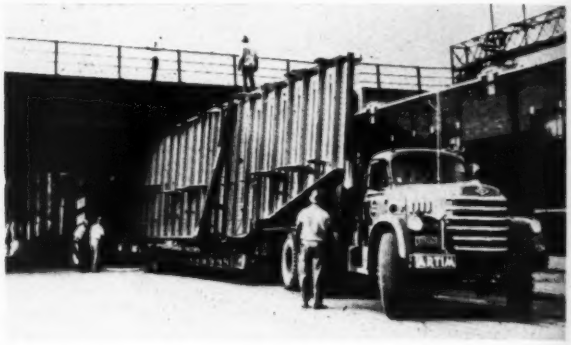
With POWERFUL "TRACK MAINTAINER" TAMPING UNITS. Another versatile, highly efficient tamper by manufacturers of the world's most successful tie-tampers. Ideal for spotting, smoothing, secondary programs, and all yard maintenance. Traveling from tie to tie and operation of workhead all hydraulically actuated and controlled. Equipped with power ram-turntable for quick transfer to opposite rail. Set-off and trailer equipped for truck towing to widely separated jobs. Inspect it at the show and contact us for complete information.

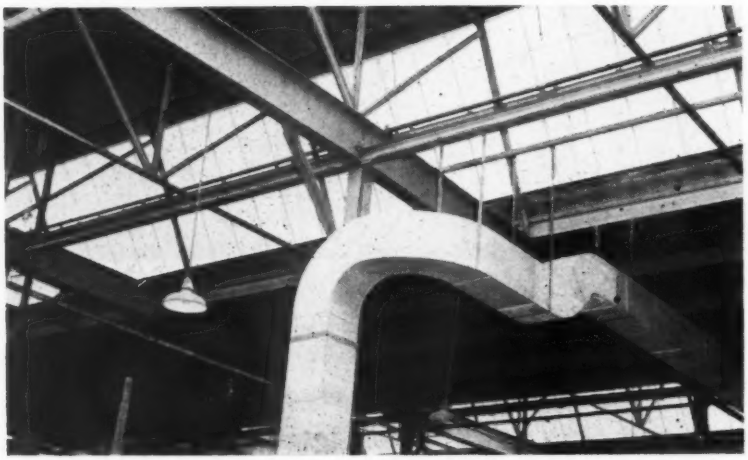




Big bridge girder

The heaviest steel girder ever shipped by the American Bridge Division of the United States Steel Corporation was recently installed in a new railroad bridge at Chicago. Weighing 187 tons, it is 126 ft long and 13 ft deep. It is one of the main members of the topmost structure of a three-level intersection. When completed the intersection will carry tracks of the Chicago & North Western and two streets over a new expressway. Arriving on three flat cars, the girder was loaded onto highway trailers and transported over city streets (below) to the construction site. There it was loaded onto two push cars operating through a temporary trestle on a short, specially built track. It was pulled alongside its piers (left) and erected by a 125-ton crane.





News briefs in pictures . . .

Fiberglass for skylights

A midwestern railroad has installed a new lightweight material called "Structoglas" to replace glass in the skylights of its coach shop. Manufactured by Structoglas, Inc., Cleveland, Ohio, it is composed of translucent reinforced fiberglass. Claimed to resist fading, breakage and discoloration, the panes are tinted green to provide glare-free light inside the shop.

Weed spraying by helicopter

The Chicago & North Western recently used a helicopter experimently to spray weeds along its right of way in South Dakota. Hovering 3 to 5 ft above the track, the "whirlybird" sprayed liquid chemicals at the rate of 30 mph. When the chemical tanks became empty they were refilled from a tank truck which followed the operation along adjacent highways.

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THIS YEAR

To complement the MULTI-GANG see the latest partnership for high speed, accurate, economical main line surfacing and smoothing

a) THE TAMPING JACK – MODEL TJ-2

The lead machine with the leading production.
Set a fast pace out front and allow your Tamper to really work. This machine will clamp on any type of rail, even on joints. Use a wire surfacing device or scope and target

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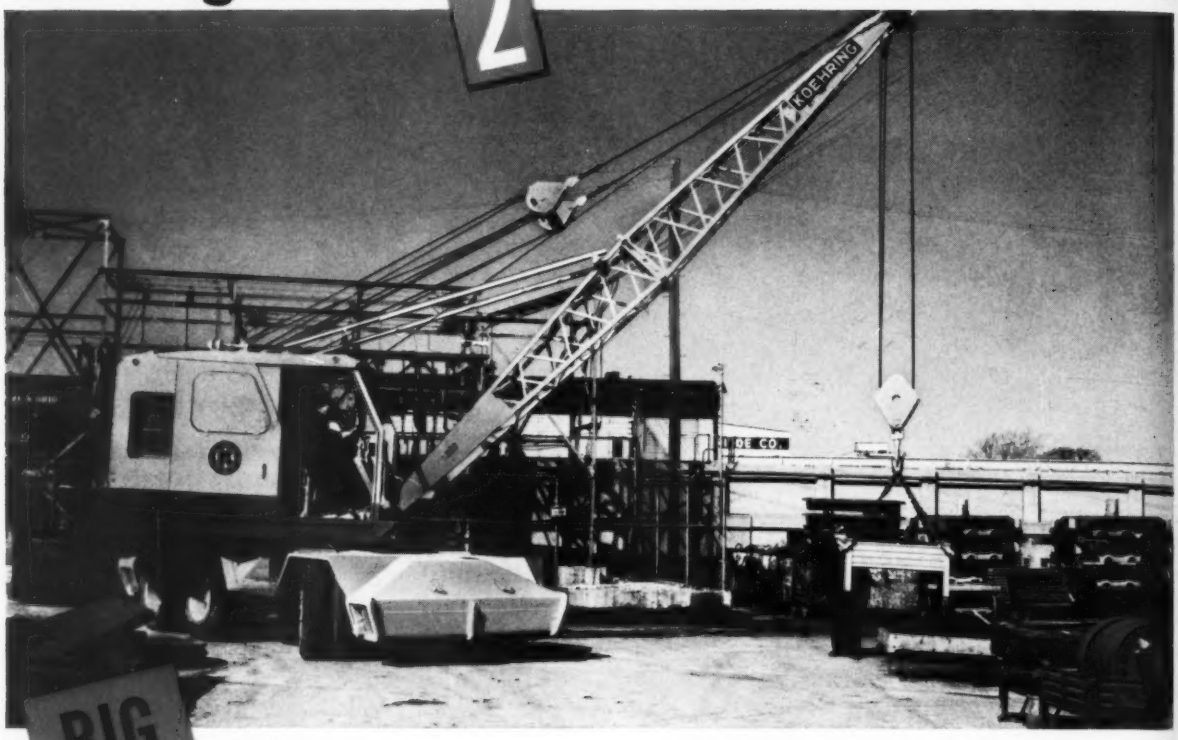
Lachine, Que.

Koehring offers 2 one-man Cruiser cranes



BIG

18 m.p.h.
25-TON 305 CRUISER

Consider what these advantages can mean in lower costs, and increased efficiency on your material handling: 25 tons of lift capacity . . . 18 m.p.h. mobility . . . one-man control of all operations . . . one engine, supplying all power for work-and-travel. You get all this in the new Koehring 305 Cruiser crane, *plus:*

Smooth torque-converter drive . . . 28% gradability . . . automotive type power-steering . . . short turn radius (only 27 ft.-9¾ in.) . . . big, fast-acting air-brakes. Boom lengths: 30 to 100 feet, *plus* 15 to 30 feet of jib. Versatile 305 Cruiser crane is readily convertible to clamshell, magnet, and other material-handling attachments. Want more details? Call Koehring distributor *now.*

Come See Us . . .

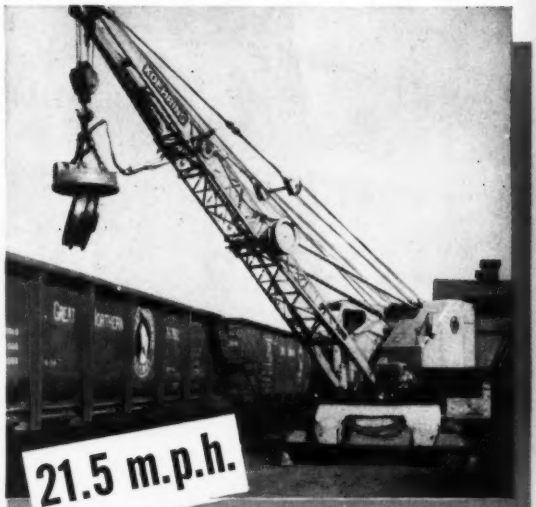
Track and Structure Suppliers Exposition

Sept. 14 - 17, 1959

Chicago Coliseum — Chicago, Ill.

Booths 106, 107 and 108

K955 RTS



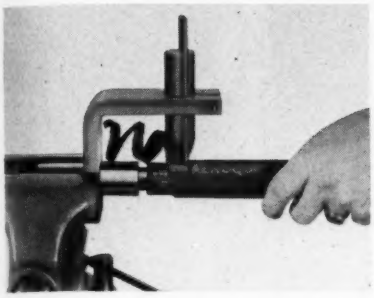
21.5 m.p.h.

15-TON 205 CRUISER

Here's the smaller, companion-model 205 Cruiser, with travel speeds up to 21.5 m.p.h., and lift capacity up to 15 tons. (Capacities on both Cruisers based on 85% rating.) Like the larger 305, this self-powered 205 features: economical one-man operation, torque-converter drive, automatic power-steering, air-actuated hydraulic brakes. Turning radius, 27½ ft. Overall width, 8 ft. Gradability, 30%. Also check big Koehring line of truck cranes (15 to 45 tons) . . . crawler cranes (10 to 95 tons).

KOEHRING DIVISION OF KOEHRING COMPANY, Milwaukee 16, Wis.

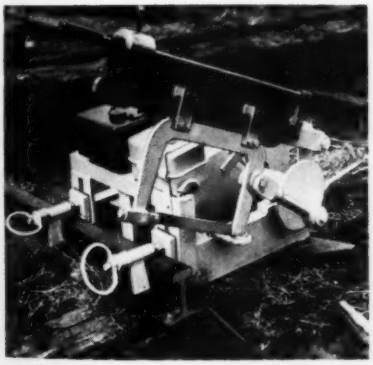
PRODUCTS



Remove outer cover with . . .

Hose stripping tool

DESIGNED for use in removing the outer rubber cover from high-pressure hoses when assembling fittings, the new Aeroquip hose-stripping tool is claimed to speed and facilitate the operation. Designated the F-2282 Hose Cover Stripping Tool, the unit can be used either in a standard shop vise, lathe chuck, drill press or Aeroquip assembly machine. The tool is available for hose sizes 4 through 32. It is constructed with a steel frame and mandrel and is equipped with a specially hardened steel blade holder. Each tool is assembled and preset for the particular size hose to be stripped. *Aeroquip Corporation, Dept. RTS, Jackson, Mich.*



Rails cut in track with . . .

Portable saw

WEIGHING 265 lb, the new King rail cutting saw is claimed to be easily clamped to any size of rail and to be quickly removed. The machine is powered by a 2¾-hp Briggs & Stratton air-cooled engine which operates a 14-in 6-tooth blade. A throttle control is provided for setting engine speed. The saw is equipped with a clutch which is said to insure that the saw will not move when the engine is started. Two tanks are provided—one for engine fuel and the other for cutting coolant. *King Manufacturing Corporation, Dept. RTS, 3146 West Chicago Ave., Chicago 22, Ill.*

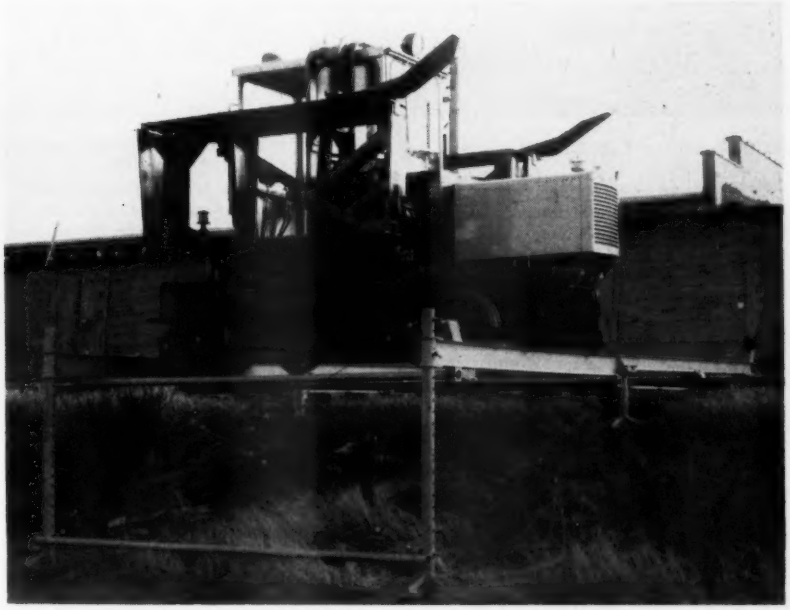
"Glue" rail joints with . . .

New adhesive

A SPECIAL adhesive, called Bondarc, is available for joining rails into continuous lengths. It is manufactured by the Armstrong Cork Company and distributed by the Rail Joint Company. Bondarc is stated to be a thermosetting adhesive that forms, through molecular linking, an extremely strong bond with the material to which it is applied. The material is said to be unaffected by the elements and to be usable in both hot and cold climates.

The manufacturer states that the technique for "freezing" rail joints with Bondarc has been tested for two years on railroads in the United States and Canada with satisfactory results. The technique consists of first heating the disassembled joint bars and rail ends to the correct temperature, after which the adhesive is applied manually to the bearing surfaces of the bars. They are then assembled at the rail joint in the usual manner. The adhesive is allowed to cure for 20 to 30 min, at which time the bond is said to be sufficient to hold the joint immobile. Ultimate strength is claimed to be reached within 2½ to 4 hr. Curing is said to take place at atmospheric temperature but at a slower rate than if heat is applied.

Tests have shown, it is said, that a rail joint consisting of 132-lb rail and six-bolt joint bars joined together with Bondarc has a tensile strength of 250,000 lb. *Rail Joint Company, Dept. RTS, 50 Church St., New York, N. Y.*



Additional equipment for . . .

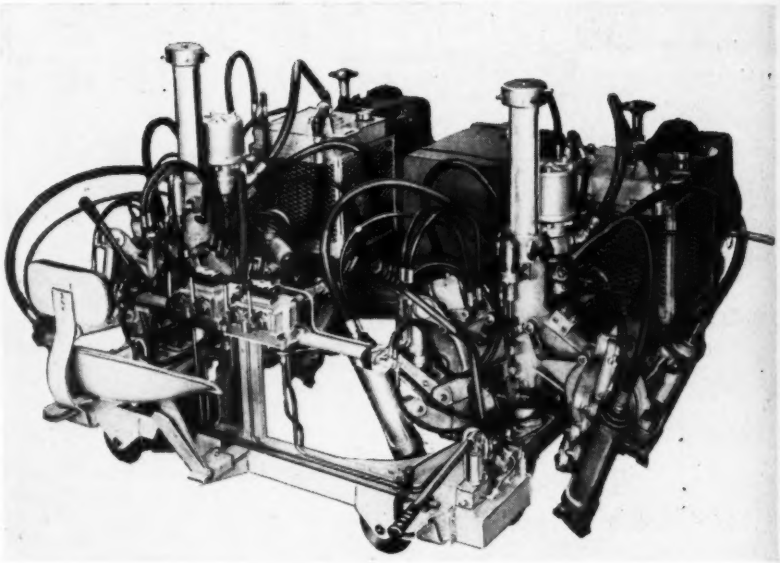
Ballast maintenance car

A PORTABLE setoff and two-way ballast-equalizing boxes are now available for use with the Fairmont W23 Ballast Maintenance Car. The latter is equipped with a removable 4-ft blade and 76-in and 10-ft bladers. The machine has a 6-cylinder engine, clutch, torque converter, three-speed transmission and four-wheel drive. In addition to the ballast equalizing boxes, the unit can be equipped with ballast plow, scarifiers, discs and track broom. The attachments are raised and lowered, and adjusted, hydraulically. *Fairmont Railway Motors, Inc., Dept. RTS, Fairmont, Minn.*

Dual-head operation for . . .

Eight-tool tamper

A NEW 8-unit spot tamper, called the "Octa-gun," has been made available. It is a dual-head hydraulic tamper, operated by one man, which is designed for spot tamping work, out-of-face and tie-replacement jobs. The manufacturer states that the machine can tamp either end of a tie or both ends simultaneously and that ties are tamped under the rail base as well as out from the rail to a distance of 18 in on either side. Hydraulic indexing is provided in order to give fast, smooth location over the tie. It is stated that swinging ties are brought up tight without an extra nipping operation and that the unit can tamp through switches due to the operator having full control of the tamping guns. *Racine Hydraulics & Machinery, Inc., Dept RTS, 1524 Frederick St., Racine, Wis.*



Travels on road or rails . . .

Gandy Wagon

EQUIPPED with flanged wheels, the Volkswagon Station Wagon is now available for transporting men and materials either on highway or railroad. Known as the Gandy Wagon, six models of the vehicle are available including a three-seater, single-cabin, pick-up truck; six-seater, double-cabin, pick-up truck; and nine-seater Kombi station wagon.

The manufacturer states that the vehicle can be used to transport track crews consisting of up to nine men and their tools; as a camp car which will sleep two to four persons; or as a track inspection car that gives unobstructed view of the track from the cab due to the engine being located in the rear.

The Gandy Wagon is powered by a 4-cylinder air-cooled engine with a gas consumption that is stated to give about 22 miles per gallon. It is equipped with standard 14-in Kalamazoo flanged wheels which are fitted with safety rims. It is said that the rims offer no intereference when the unit is travelling through self-guarded frogs.

Insulated and equipped with individual springs, the flanged wheels are nested horizontally and are lowered mechanically. They are held in the track position by double safety catches. Weight of the vehicle on the track is distributed so that the front portion is carried on the flanged wheels whereas the rear portion is carried half on the flanged wheels and half on the rubber-tired wheels. The steering wheel can be locked when operating on the track. Braking on both highway and railroad is accomplished by four-wheel hydraulic brakes.

The Gandy Wagon is equipped with an electro-mechanical turntable-jack which is claimed to permit one man to place the vehicle on the rails, reverse its direction of travel or remove it from the track within two minutes.

A trailer hitch and a set-off are available for use with the vehicle. *Gandy Wagon Company, Dept. RTS, P. O. Box 151, Oyster Bay, L. I., N. Y.*

•

Improvements made to . . .

Traxcavator

DESIGNED as an all-around digging and loading tool, the new Caterpillar 933 Series F Traxcavator is claimed by the manufacturer to have several efficiency-increasing improvements over the former model. Features of the machine are stated to include a new engine, stronger power train, larger-capacity bucket and an operator's compartment that is built for maximum comfort. The new 4-cylinder engine is rated at 52 flywheel horsepower and is 350 lb lighter and 9 in shorter than the previous model. It is equipped with a dynamic balancer which is said to result in a smoothrunning power plant. The manufacturer states that the service life of the power train has been lengthened by increasing the thickness of two components and strengthening the final drive assembly. An improved brake is claimed to give full-contact braking with 30 per cent less operator effort. Over-all production of the Traxcavator is claimed to be increased up to 20 per cent by a higher reverse speed of 3.67 mph and by the use of a new 1⅛-cu yd bucket which replaces the former 1-cu yd bucket. A seat which is said to be comparable to those used on the larger units has been provided on the new 933 for the purpose of increasing operator comfort. To facilitate operation the ground clearance has been increased to 12.5 in. *Caterpillar Tractor Company, Dept. RTS, Peoria, Ill.*

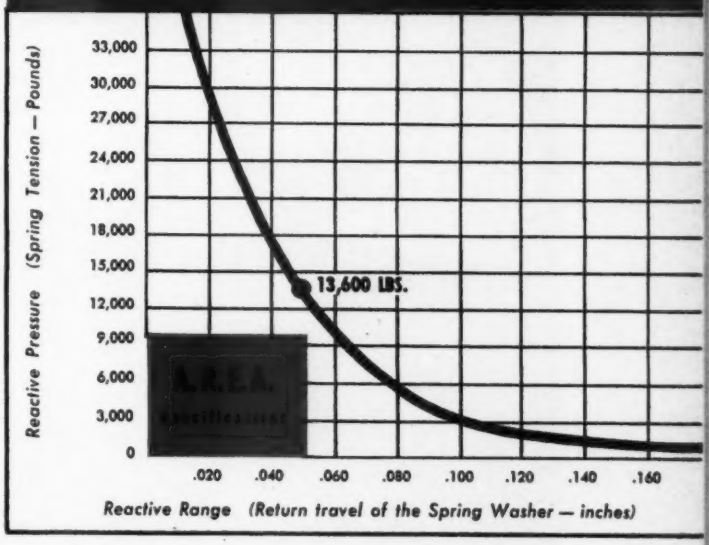
(*More on page 66*)

Are You Specifying Crossing Washers that meet The New A.R.E.A. standards?

For a greater margin of safety and longer service in critical crossing applications, specify Eaton-Reliance HY-CROME DOUBLE COIL HELICAL SPRING WASHERS — the spring washers which exceed the new A.R.E.A. standards by as much as 30%. This extra protection — which costs you no more — saves maintenance labor and dollars by pro-longing the life of crossing joints.

Now, minimum A.R.E.A. Standards for crossing spring washers require 10,000 lbs. reactive pressure at .050" release from the fourth application of a 60,000 lb. load. With looseness a potential cause of accidents in every crossing joint, the additional reactive pressure found in Eaton-Reliance Spring washers is a safety factor you can't afford to overlook.

The Eaton-Reliance line of railroad spring washers includes the Hy-Pressure Hy-Crome®, now in use on millions of rail joints, and the Locomotive Hy-Crome for all rolling stock applications. Write for free Engineering Bulletin R-53 for details or request a call by one of our representatives.



At right is pictured a portion of the Reactive Spring Pressure Curve for the 1¼" size of the Eaton-Reliance Double Coil Hy-Crome helical spring washer engineered exclusively for crossing applications. The reactive range is approximately 5/16".

EATON

RELIANCE DIVISION
MANUFACTURING COMPANY
603 CHARLES AVENUE • MASSILLON, OHIO

SALES OFFICES: New York • Cleveland • Detroit • Chicago • St. Louis • San Francisco • Los Angeles

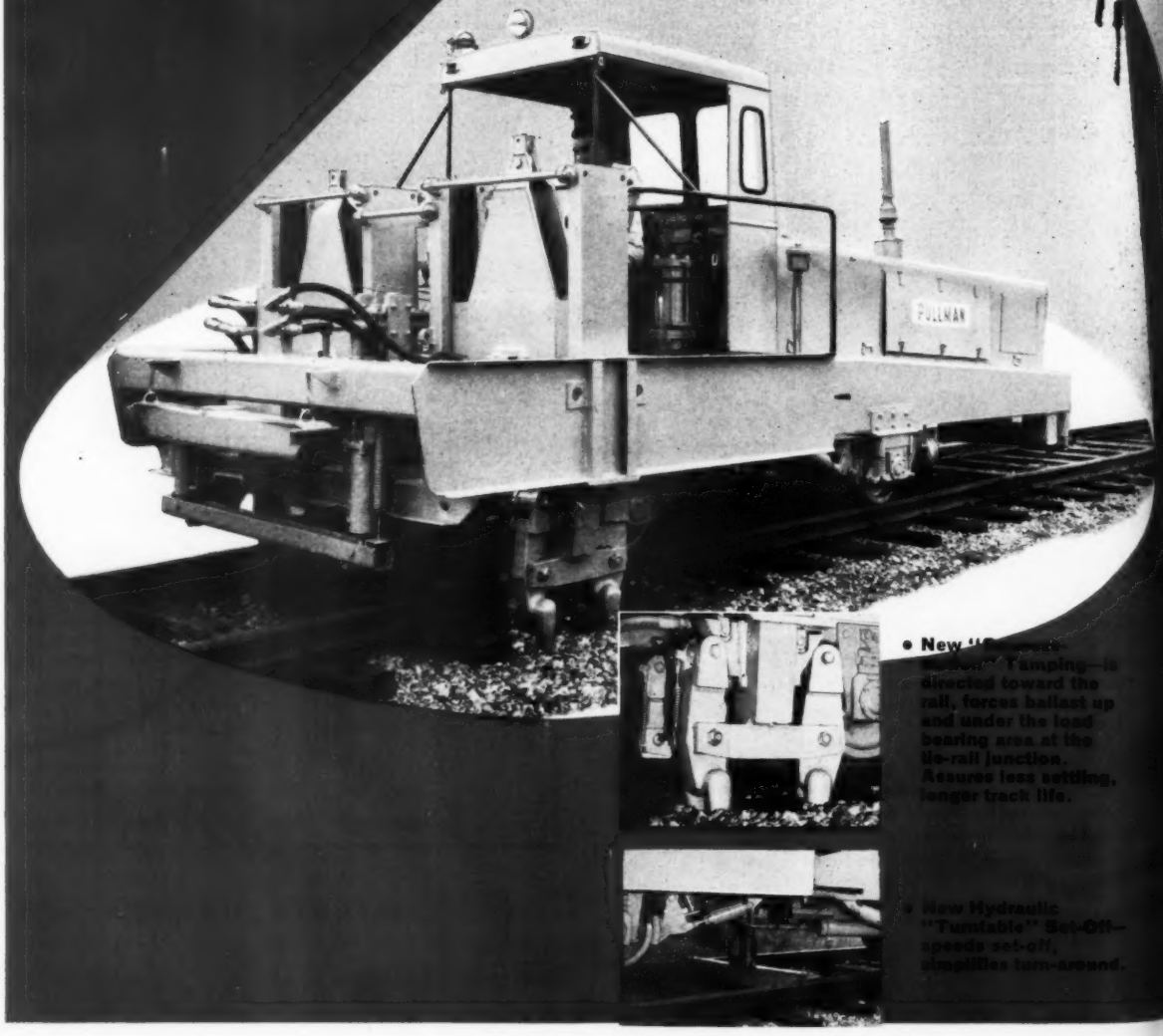
PRODUCTS: Engine Valves • Tappets • Hydraulic Valve Lifters • Valve Seat Inserts • Jet Engine Parts • Hydraulic Pumps Motor Truck Axles • Permanent Mold Gray Iron Castings • Forgings • Heater-Defroster Units • Automotive Air Conditioners Fastening Devices • Cold Drawn Steel • Stampings • Gears • Leaf and Coil Springs • Dynamatic Drives, Brakes, Dynamometers

at the track show

Chicago's Coliseum, September 14 to 17, 1959

you'll see the new

P-S POWER BALLASTER

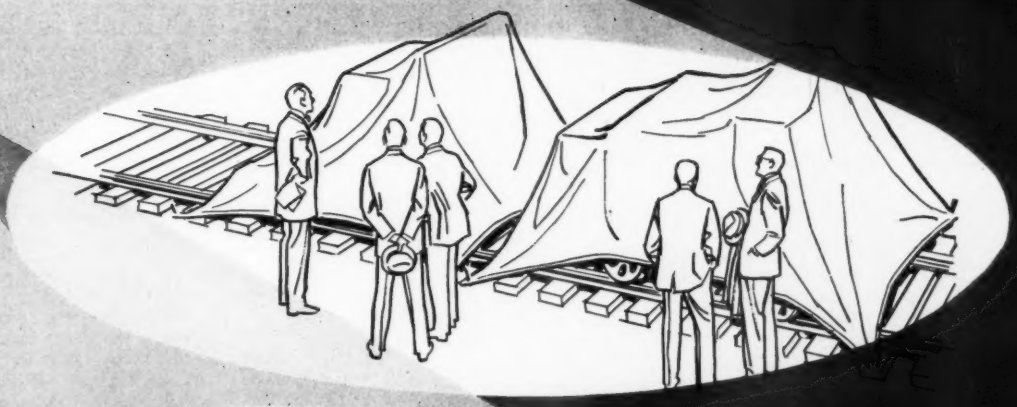


• New "[illegible]" Tamping—is directed toward the rail, forces ballast up and under the load bearing area at the tie-rail junction. Assures less settling, longer track life.

• New Hydraulic "Turntable" Set-Off—speeds set-off, simplifies turn-around.

we'll take the wraps off

A REVOLUTIONARY IDEA IN TRACK SURFACING,
THE NEW P-S ELECTRONIC TRACK RAISER!



you'll see the new
P-S TIE SPACER...

Fastest, most versatile tie-spacing machine available.

you'll see the new
P-S RAIL HANDLER...

Portable, lightweight, easy to use . . . one man operation

PULLMAN-STANDARD

A DIVISION OF PULLMAN INCORPORATED
1414 Field Street, Hammond, Indiana

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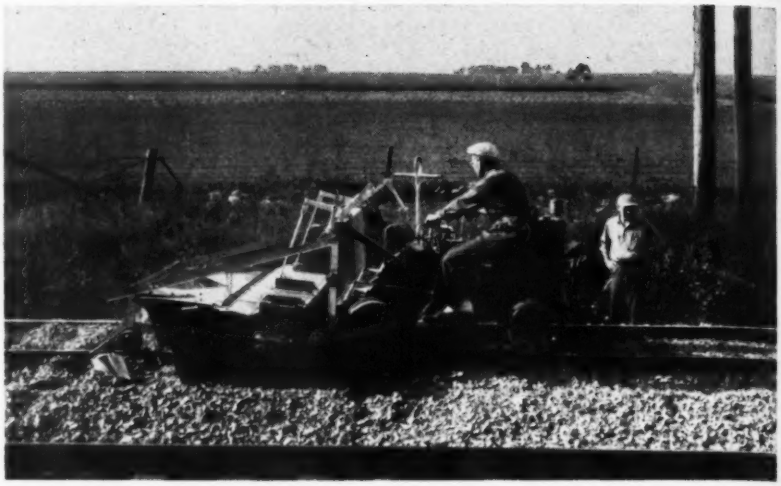


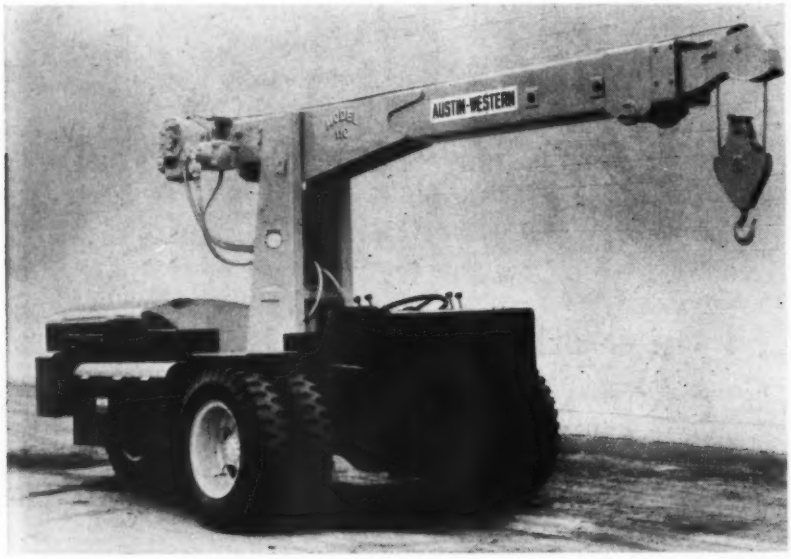
Excess ballast removed by . . .

Track sweeper

A TRACK MACHINE, designated the Trak-Sweeper, is now available for removing excess ballast from the tops of ties subsequent to a raise and for leveling ballast in the track and across the crib areas in readiness for the production tamper. For the latter objective, the Trak-Sweeper is positioned between the jacking operation and the tamper. For this reason, its weight has been kept low by using aluminum wherever possible. The machine weighs approximately 2,800 lb.

Ballast is swept by a rotating impeller mounted at the front of the machine. It has four bands of very heavy rubber which are specially shaped for cleaning the rail base. The impeller is raised and lowered hydraulically and has two rotating speeds. The slow speed is intended for leveling the ballast ahead of the tamper and the high speed is for removing excess ballast after tamping. When operated at high speed, the impeller throws the ballast against a baffle which deflects it out from the tie area.

The deflecting baffle is suspended from the front of the Trak-Sweeper and is mounted on its own wheels. Thus adjustments to the baffle and impeller for varying rail heights can be made independently of each other. When clearing for trains, the baffle can be manually removed from the track as a separate piece. A turning arrangement and set-off rails are furnished with the machine. Propulsion is hydraulic with "super-low" working speed and a travel speed up to 15 mph. *Nordberg Manufacturing Company, Milwaukee 1, Wis.*



Operates on three wheels . . .

Hydraulic crane

VERSATILITY is claimed for the new Austin-Western three-wheeled, self-propelled hydraulic crane. Designated the Model-110, it features four optional booms which are stated to tailor the machine to any job in the 3 to 5-ton range.

The simplest version is equipped with a hydraulic cable hoist and requires manual boom topping. Capacity is 5000 lb when the load is 7 ft ahead of the bumper and 10,000 lb at 2 ft.

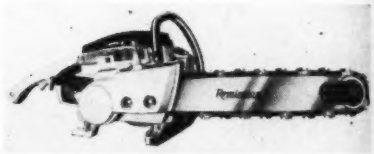
Another version provides longer reach and greater capacity. It has a more advanced boom and is equipped with hydraulic boom topping and a 6-ft manual or power boom extension. The crane is designed to lift 3000 lb when the load is 13 ft ahead of the front bumper.

Still another type of the Model-110 has a telescoping boom which extends horizontally from 7 ft to 13 ft. Cable hoist, boom topping and boom telescoping are all operated hydraulically from the operator's seat.

The last type available includes, in addition to the hydraulically-operated telescoping boom, an optional swing mechanism that is completely hydraulic and which rotates the boom through 220 deg. Manual extensions are also available to give this version a working radius up to 18 ft 7 in.

The features of the four versions of the Model-110 are available in any combination.

The chassis of the machines is a conventional three-wheel design with dual front driving wheels and a single, rear-power booster steerable wheel of the trunnion type. All wheels have pneumatic tires. The new hydraulic crane operates up to 15 mph. *Austin-Western Works, Sales and Promotion Department, Dept. RTS, Box 445, Aurora, Ill.*



Roller bearing for . . .

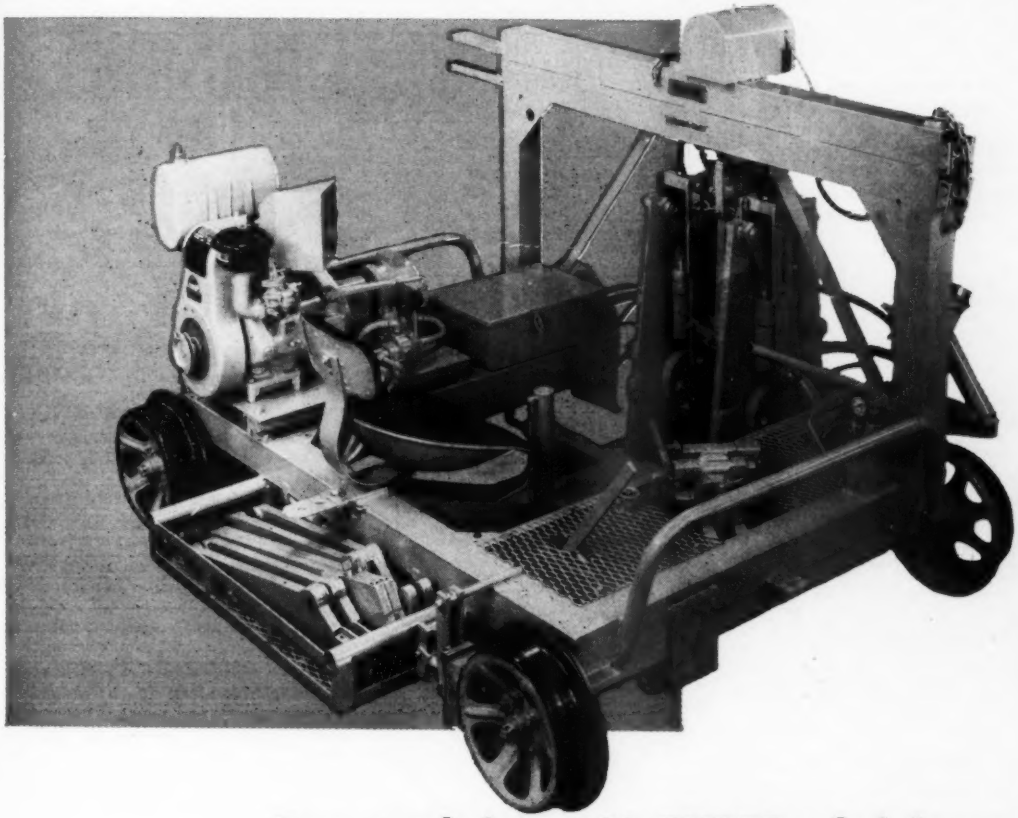
Chain saw

POWERED by a 3½-hp gasoline engine, the new Remington Arms "Bantam" chain saw is equipped with a roller bearing at the tip of the guide bar to reduce friction and increase cutting power. Available with 12, 18 or 24-in guide bars, the machine is guaranteed for one year. Features claimed for the Bantam include low center of gravity, horizontally mounted cylinder, minimum vibration, sustained oil spray lubrication, light weight and an easily sharpened cutting chain.

In addition, the new chain saw is equipped with "Turbo-blast" high velocity airstream cooling and a sealed high-tension magneto ignition system. The latter is stated to produce fast starts with either hot or cold engines. Operating and adjusting controls are located on top of the unit. *Remington Arms Company, Inc., Dept. RTS, Bridgeport, Conn.*

RACINE

Hydraulically operated *"Anchor Fast"* ANCHOR APPLICATOR



For applying ALL TYPES of drive-on or tool applied hang-on anchors

The only machine, of its kind, in the field. The "Anchor-Fast" is hydraulically controlled and self-propelled. Maximum speed 15 mph. Unit is powered by a hydraulic jack cylinder for "off track" movement or can be revolved 180° for work on opposite rail.

CONSTRUCTION AND OPERATION FEATURES

- Smooth hydraulic pressure with adjustable stops, prevents over driving.
- Positive anchor-to-tie application.
- Machine can be used for either single or box anchoring.
- Powered by a 9.2 hp gas engine with clutch and reduction gear.
- Size of unit—95" x 75" x 56". Wgt. 2300 lbs.

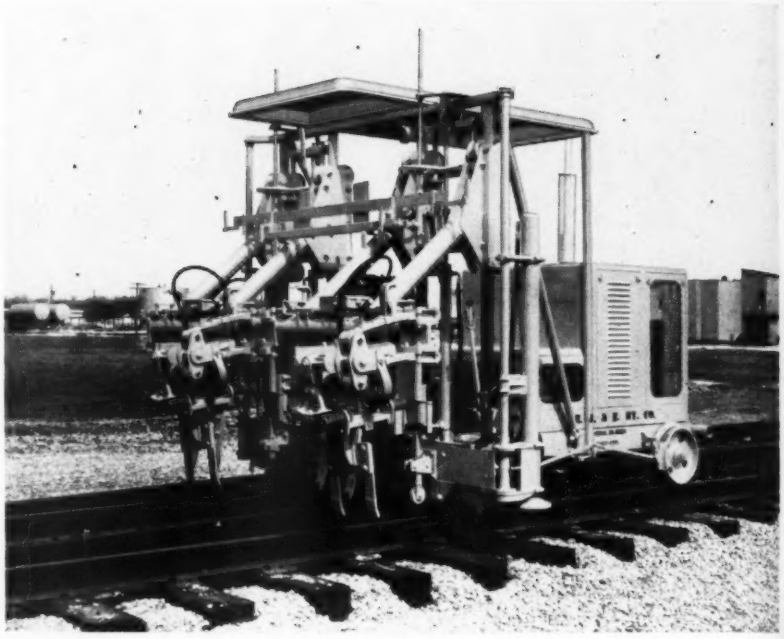
RACINE SECO

RACINE HYDRAULICS & MACHINERY, INC.

Machinery Division **Racine, Wisconsin**

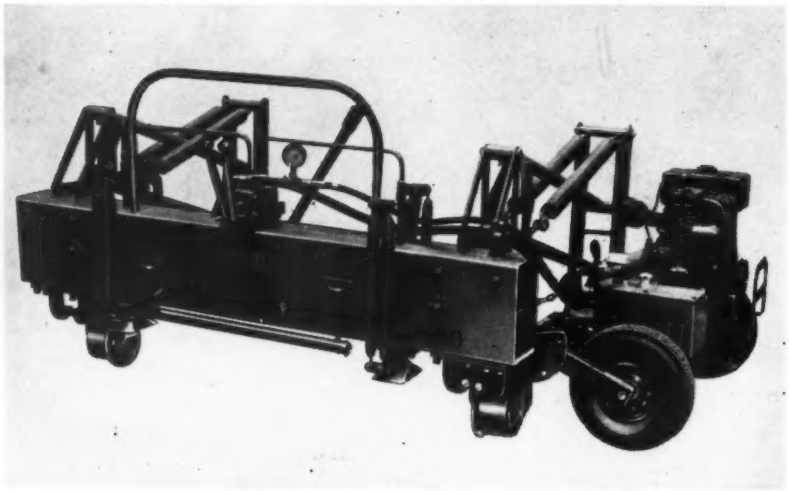
Push-button controls for . . .

Jack-spot tamper



INTRODUCTION of the Model 1960 Jackson Jack-Spot Tamper has been announced. The machine, which is said to be adapted for raising track against a wire, features electric push-button controls and two independently-operated workheads. Each head is equipped with vibratory tamping units which are controlled for separate or combined working. Vibratory motors incorporated in the tamping units are powered by a Ford 172 industrial engine. The engine directly drives a generator which indirectly drives a Dudco dual hydraulic pump.

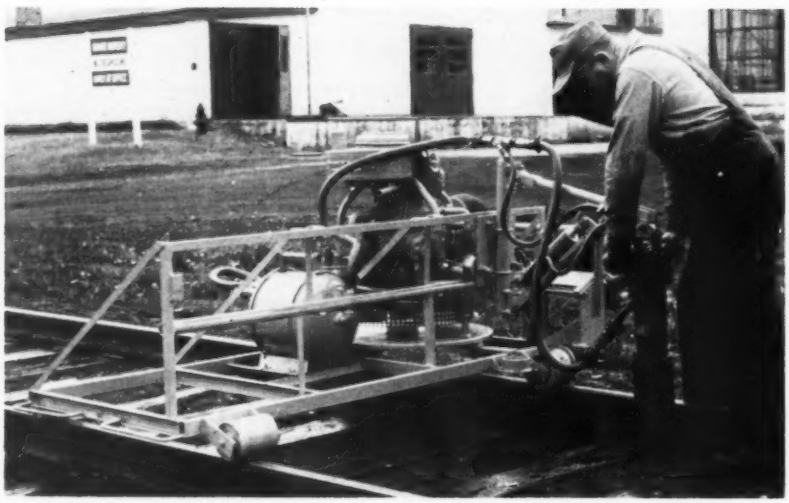
The Model 1960 is equipped with a hydraulic-ram turntable for raising and turning the machine to reverse its direction or for setting it onto cross rails for removal from the track under its own power. The unit also is equipped with a portable steel setoff, the standard assortment of spare parts and accessories and a complement of maintenance tools. *Jackson Vibrators, Inc., Dept. RTS, Ludington, Mich.*



Differential raises with . . .

Rail lifter

TIE PLATES can be installed, or removed quickly and easily, it is claimed, by the use of the improved Fairmont W86 Hydraulic Rail Lifter. Operated by one man, the machine can lift both rails at the same time. This is accomplished by clamps which grip the ball of the rail and two rams which push against the tie. On the improved model, the lifting rams have been equipped with individual control valves so that each rail can be raised the desired height. In addition, the construction of the rail-clamp linkage has been modified to give a better grip and improved operation on curves and under variations in track gage. Two pneumatic setoff wheels are provided for the purpose of enabling two men to remove the unit from the track. *Fairmont Railway Motors, Inc., Dept. RTS, Fairmont, Minn.*



Frame supports hammer on . . .

Spike driver

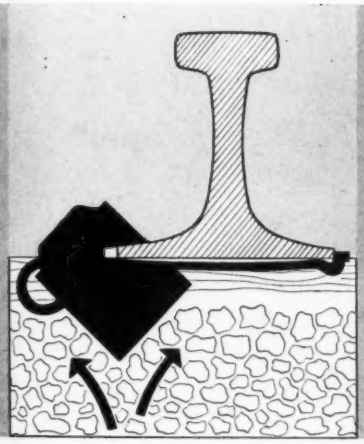
EQUIPPED with a sliding frame which supports the hammer, the new Northwestern Model PD-259 pneumatic spike driver is claimed to allow quick positioning of the hammer over either rail. The frame is designed to slide on the carriage and has an arm to which is attached an Ingersoll-Rand Model PB8A spike driver. The arm is equipped with a single-acting air cylinder which is said to do all the lifting. The operator swings the hammer into position on the spikes adjacent to either rail.

The machine is said to be compact and lightweight. It is equipped with an Ingersoll-Rand Model 3R36 engine and compressor unit. The carriage is equipped with two rubber-tired wheels for placing it on, or removing it from, the track.

The manufacturer states that a wide va-

Welded Rail Needs Bulldog Rail Anchors

HOLDING POWER is the reason. No other rail anchor provides as much *immediate* and *sustained* holding power as a BULLDOG. That's because *only* BULLDOG is made with two factory-assembled parts that provide a two-way grip . . . with each part multiplying the holding power of the other.



BULLDOG ANCHORS keep their grip. Because sustained holding power is vital in anchoring welded rail, you need the unyielding grip of BULLDOG. Even frozen ballast can't break this grip because the point of the clamp pushes the ballast to either side.

AND BULLDOGS save you money. The deep, flat tie-bearing surface protects ties, won't disturb spike because it doesn't contact tie plate. Easy driving saves time. Can be reapplied with no loss of holding power. And BULLDOGS are easy to ship, easy to handle . . . cost no more.

TO SUMMARIZE . . . Welded rail *demands* the sustained grip of BULLDOG anchors. You just can't afford to skimp on holding power. You get the savings of safe re-use . . . tie protection . . . easy, fast application. And you don't pay a penny more for BULLDOG advantages. Your True Temper representative has all the facts. Or you can write True Temper, Railway Appliances Division, 1623 Euclid Avenue, Cleveland 15, Ohio.

OTHER TRUE TEMPER RAILWAY PRODUCTS: Track Shovels • Ballast Forks • Weed Cutters • Hammers • Sledges • Scythes • Safety Rail Forks.

TRUE TEMPER®
BULLDOG RAIL ANCHORS

YOU CAN LOOK TO TT FOR LEADERSHIP

riety of air tools can be adapted for use with the machine, including tampers, paving breakers, power hammers, grinders, chippers and scalers, drills and air motors. *Northwestern Motor Company, Dept. RTS, Eau Claire, Wis.*

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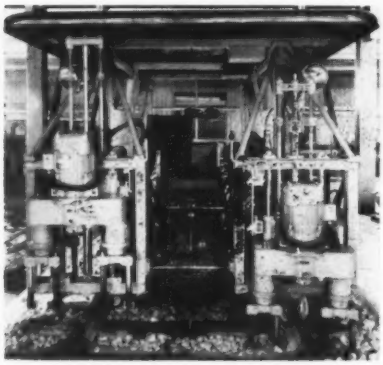
Mark bridges with . . .

Navigation lights

RAILROAD sales of a recently redesigned marine lantern for marking bridges over navigable waters have been assigned to the Reade Manufacturing Company. The lanterns are produced by Wallace & Tiernan, Inc., said to be the world's oldest and largest manufacturer of electric aids to navigation.

The improved lantern features the use of a four-place, automatic, lampchanger for the low-voltage, concentrated filament lamps. It is stated that over 10,000 hr of burning life are provided by the four-lamp complement. Premature filament failure from vibration is said to be minimized by a shockproof mounting. A step-down transformer is an integral part of the lantern.

These lanterns are said to meet all the U.S. Coast Guard requirements for marking bridges over navigable waters. *Reade Manufacturing Company, Inc., Dept. RTS, Jersey City 2, N. J.*



Automatic features for . . .

Production tamper

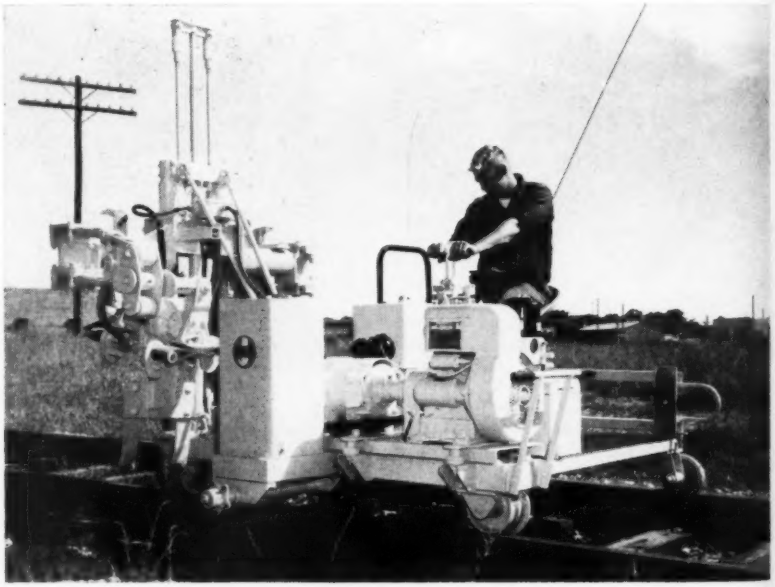
THE NEW Tamper Limited Electromatic tamper is capable of completely automatic operation, according to the manufacturer. The four-wheel machine has 16 tamping tools mounted on the front end. It employs the squeeze and high-frequency method of tamping with tools that are rated at 3000 vibrations per minute. The new tamper is designed primarily for the consolidation of ballast in connection with surfacing lifts. However, the manufacturer states that the machine is adjustable to operate under any conditions of ballast with effective tamping in raises up to 8 in.

The tamping functions of the unit are accomplished hydraulically and are electrically controlled so that the work can be done automatically or by manual pushbutton. The automatic sequence of operations is initiated by pushing the "cycle start" button on the control panel. By means of a remote control button, the operator can also initiate the tamping functions while standing beside the machine. The sequence consists of locating the tie, braking, down thrust and squeeze-in pressures, raising tools to clearance position, brake release and movement to next tie. Clamps are provided to automatically engage the rail when the tools are working in cemented ballast. The operator assesses the type of ballast to be worked and sets controls for the desired down thrust and squeeze-in pressures. When being operated manually the heads can be worked independently of each other and the tools adjusted to compensate for slewed or unevenly spaced ties.

The new tamper has a welded steel carriage and is powered by a water-cooled diesel engine which is mounted beneath the deck of the machine. The engine drives a flange-mounted alternator and hydraulic pumps and furnishes power for traction and operation of the workheads. Directly coupled motors are vertically mounted to the workheads. It is said that this decreases the power loss through the transmission and at the same time simplifies the design and keeps maintenance to a minimum. Maximum travel speed is stated to be 25 mph.

A double-acting hydraulic jack with turntable is located at the center of gravity of the machine for reversing its direction of travel or for removing it from the track. Setoff rails are provided for the latter purpose.

The Electromatic Tamper is designed to carry a crew of men and is equipped with a one-ton boom and winch for loading and unloading auxiliary tools and equipment. An outlet is provided for the operation of power tools requiring 110-volt single-phase power. Floodlighting for emergency or night operation is also incorporated on the machine. *Tamper Limited, Railway Division, Dept. RTS, 160 St. Joseph St., Lachine, Montreal 32, Que.*



Hydraulic operation for . . .

Monorail tamper

EQUIPPED with "Track Maintainer" tamping units, the new Jackson Monorail tamper is claimed to be ideal for spotting and smoothing, secondary maintenance programs and all yard track maintenance. It is a self-contained, self-propelled machine operated by one man. The new tamper is designed to place ballast under one rail at a time by means of two JS-type electric tamping units which are held in a cross-tamping position, that is, diagonally across the rail and tie. The tamping units are supported by one workhead and are each equipped with two tamping bars. The vibratory motors are rated at 4000 to 4500 vibrations per minute. Traveling, indexing and operation of the workhead are hydraulically actuated and controlled.

The power unit of the machine consists of a Wisconsin THD air-cooled gasoline engine which is rated at 15.2 hp at 2400 rpm. The engine is equipped with a 6-volt electric starter and ignition system. Maximum travel speed of the machine is slated to be 12 mph.

A power ram-turntable is provided on the unit to reverse its direction of travel, transfer it to the opposite rail or remove it from the track. A setoff and a trailer for towing the machine behind a truck are furnished with the tamper. *Jackson Vibrators, Inc., Dept. RTS, Ludington, Mich.*

This Cat No. 12 Motor Grader is spreading granular slag as sub-ballast for roadbed. It spreads 15 carloads a day, each car holding 60 cu. yd. User: Baltimore & Ohio Railroad, Baltimore, Maryland. On this and other jobs the No. 12 works 8 hours a day, 6 days a week, all year round.

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3 There's a new, stronger one-piece case for the transmission and final drive. This eliminates possible leakage at gaskets. In addition, transmission bearings have been strengthened for longer gear life.

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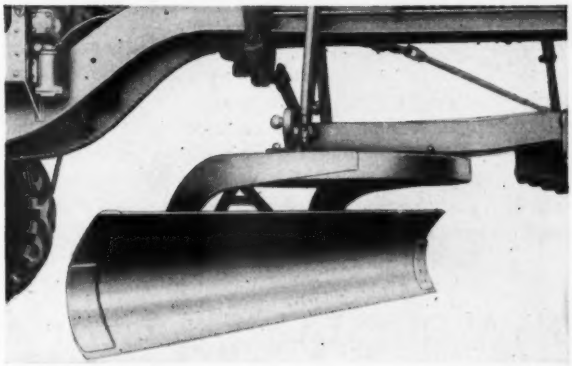

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STEP UP PRODUCTION WITH THE IMPROVED No. 12

WHAT'S THE ANSWER?

Driving spikes ahead of sled

Is it desirable and economical to have men work ahead of an undertrack sled or plow tapping down high spikes? What are the advantages, if any? Explain.

Saves time and anchors

By L. G. LAWSON
Roadmaster
Canadian National
Melville, Sask.

When we first started raising track with a ballast undertrack sled we anchored each and every tie so that they would not be moved while sledding. This took three times as many anchors as we had in the track holding against the direction of the pull of the ballast sled. On our main line we have on an average 16 boxed anchors per rail, only eight of which are holding against the pull of the ballast sled. Hence, a large number of additional anchors had to be installed on the portion of track worked each day. They of course had to be loaded on push cars and brought ahead. This constituted a lot of work for the extra gang.

We started off with a supply of 5000 one-piece anchors that were easily installed and taken off. Some anchors were always lost daily and some were left to replace broken or missing anchors in the track section. Also, as all supervisors know, all good section foremen try and get as many anchors on their sections as possble. In view of this, it is easily seen that after a few weeks we had few rail anchors left.

Because of this and the fact that the gang working with the ballast sled had a hard time keeping up its end of the work, owing to the installation of ties and rail anchors, it became desirable to devise a new method of preventing the ties from moving with the operation of the sled. The practice of tapping the spikes was tried and found to be quite satisfactory. Ties moved very little if loose ties were pinched up when tapped.

It is also undesirable to space ties when sledding the fouled ballast because in order to do this the ties must be loosened. They then run badly during the second sledding operation with the crushed rock. Some gangs still do this but it is only a waste of valuable time. Ties should be renewed after the first sled is run through but the old ties should not be moved, otherwise the spikes are loosened.

We tried a SpikeMaster to tap the spikes. This machine also nips the ties. Using only two men, who also easily remove the unit from the track without any additional help, a mile of spikes can be tapped in two to three hours, if only the loose ties are nipped.

When this method was used, we found on many occasions we went five to ten rail lengths without moving a single tie during sledding operations. These have to be tapped the day of the sledding, or not more than one day ahead, to get the best results. We have installed as many as 1400 ties per mile but average about 500 ties per mile for renewals and spacing. Very rarely does a new tie installed have any movement during following sledding operations if spiked with a SpikeMaster.

By all means tap spikes carefully ahead of the undertrack sledding. We are able with a gang of 35 laborers to unload and sled between 1500 and 2000 cu yd of ballast daily, while at the same time installing 400 to 800 track ties. We also have to clear eight to ten important freight trains daily and transcontinental passenger trains and do not at any time hold these trains up during ballasting operations, other than at the flagmen to receive instructions. This would be impossible if we did not tap spikes firmly ahead of the sledding operations. Re-spacing of ties due to movement by ballast sleds is practically nil when spikes are properly tapped.

NEW QUESTIONS to be answered in December

Do you have an answer to any of the questions listed below? If so, send it in. Payment—based upon substance and length—will be made for each published answer. If you'd prefer that your name be withheld, we'll gladly comply.

DEADLINE: October 30

- 1. Can crossties be tamped too solidly with production tampers? If so, what is the effect on the ties and riding qualities of the track? Does the density of traffic or the speed of trains make any difference? Explain.
- 2. What is the most economical method of heating small two-or three-room wayside buildings? Explain.
- 3. What types of automatic starters are available for igniting switch heaters at outlying locations? What attention is necessary to assure their dependability? Explain.
- 4. Should a timber pile be pointed for driving? Why? Should it be square-pointed or round-pointed? How long should the point be made? Should the pointing be done in the field or at the treating plant? Explain.
- 5. What is the most effective method for protecting small roadway machines and power tools from weather and vandals when it is more convenient and less costly to leave them setting at the work site along the right of way? Explain.

Send answers to:

What's the Answer Editor
Railway Track & Structures
79 West Monroe Street
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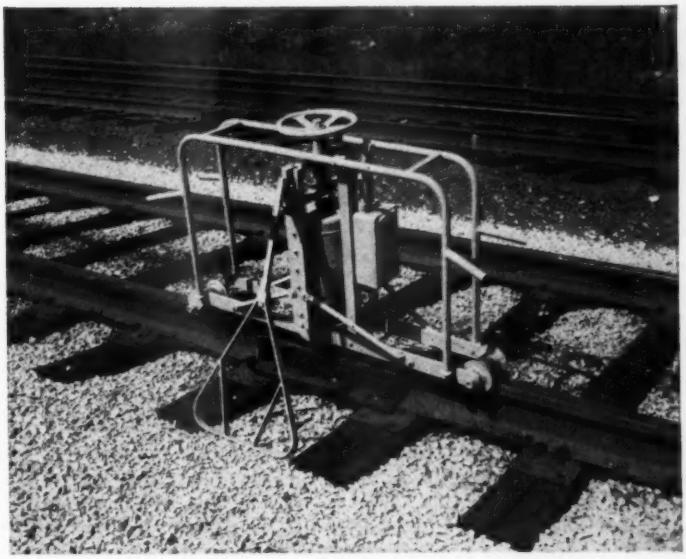

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What's the answer? (cont'd)

Dictated by local conditions

By J. W. CHRISTOFF
Vice President
Mannix International, Inc.
Minneapolis, Minn.

The movement of ties while using an undertrack plow or sled has always caused concern on railroads utilizing this type of equipment. If tie bunching is severe, unnecessary labor is used to respace the ties to a set pattern. Various methods and items have been used in order to prevent the ties from moving in the direction that the undertrack plow moves.

The most successful method, of course, is the use of one rail anchor per tie. This, however, is a costly operation, considering the cost of labor. After numerous experiments on different weights of rail and tie plates, we have come to the conclusion that local conditions will dictate the need of spikes being tapped down ahead of the sled and plow.

The desirability of having spikes tapped down is to insure that the base of rail remains in the flange or flanges of the tie plate. If the flange remains in contact with the base of rail there is less tendency for the tie to move forward any great distance. In some cases the undertrack equipment is used in locations where the tie condition is such that it is not economical to tap down the spikes ahead of the plow, in that the number of ties to be renewed is excessive. In this case, it would not be economical to tap down the spikes as there is no concern for the ties that are going to be removed and new ties spaced in. In cases where the ties are spaced by hand, tapping down the spikes ahead of the plow creates an undesirable effect because the ties are extremely hard to space.

On reballasting jobs where a plow is used to strip the track and make tie renewals, it is not economical to tap down the spikes ahead of the plow. However, while the tie renewal is being made behind the plow, it is economical to tap down the spikes on every tie and make certain that every tie is spiked to the rail in preparation for the passing of a ballast sled to raise the track. This practice has been in force on various railroads for some time and has proved very effective.

There have been cases where the ballast sled has been pulled as much as eight miles in a relatively short time on new track without experiencing an adverse effect of tie bunching. This would tend to indicate that if every tie were tightly fastened to the rail ahead of the undertrack equipment there would be no tie bunching at all. However, this is not the case because different rail sections and conditions in the field will not always prove this to be true. For an example, on some lines with single-shoulder tie plates, there has been less tie bunching then in other locations where there are double-shoulder tie plates and the spikes have been tapped down ahead of the plow.

On railroad trackage where a plow and sled both are being used, the spikes should be tapped down prior to the passage of the ballast sled. In locations where only a sled or plow is being used to either remove the old material or make an initial raise, local conditions should dictate the policy in regard to tapping down the spikes. It is for these reasons that I believe that experiments with the trackage during the operation will prove this far better than a set policy.

Straightening piles while driving

When a pile being driven is found to be drifting off line, should it be withdrawn and restarted or should it be straightened while driving? Explain. Can straightening result in premature failure of a pile? If so, how?

Recommends redriving

By J. W. PORTER
Supervisor Bridges & Buildings
Great Northern
Minot, N. D.

There has been a lot of talk concerning the straightening of piles while they are being driven. Should they be pulled out and redriven if they drift out of line? If a pile starts to drift before it has been driven too far, and if the condition of the ground is favorable, it is best to pull it and start it over again. Start the pile back far enough so that when it has been driven to the required depth it will be in line with the rest of the bent.

Should a pile start to drift while driving in rocky or other hard formation, and it has been driven too far to pull out and start over, we generally use a cable to hold the pile in the leads and insert a wedge-shaped piece of timber behind the pile to hold it in line. This is not usually recommended because it opens the wood and water will seep into the grain of the wood and shorten the life of the pile.

We have driven some piles in ground formations where they could not be held in line or pulled out. In this case, we generally stop the pile driving, cut the pile nearly off, put it in line and drive it down far enough so that it will not decay. We have even found it necessary to waste a pile by cutting it off and driving another one alongside it, if room permits.

To sum up—if you are working in ground that is free from rock or other debris it is permissible to pull the pile and redrive it without any harm to the pile. If the ground in which you are driving is rough or rocky and the pile is driven too far before it starts to drift, one of the other methods is generally used.

I might also mention that there are ways of sharpening the end of the pile to make it drift in the proper direction so it will be in line when the bent is completed.

Try other alternatives

By E. A. PANUSHKA
B&B Supervisor
Northern Pacific
Fargo, N. D.

It is presumed that a supervisor having difficulty with a pile drifting off line has already tried trenching on sloping ground, or digging a hole by hand or auger, where practicable, to start the pile on its intended course. If the pile is drifting off line, it should be pulled out if it has not been driven over 5 to 6 ft. The pile should then be restarted to compensate for the drift.

If the pile still persists in drifting, it

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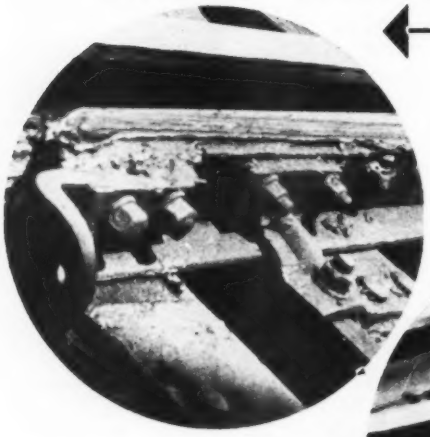

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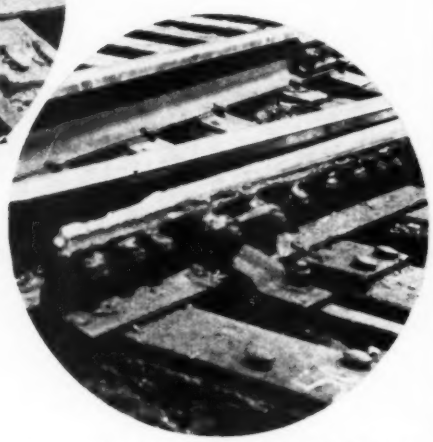

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What's the answer? (cont'd)

is possible to straighten it while driving. This depends on the nature of the soil and the distance from the proposed pile cut-off to the ground line. It must be remembered that the relative straightness of the pile also must be considered, since a vertical force on a crooked pile produces eccentric loading with accompanying bending stresses.

To answer the question, "Can straightening result in premature failure of a pile?" I am of the opinion that straightening will not damage the pile prematurely unless it is pulled over too far. If this is done, the damage should be apparent at the time of driving.

Cites causes of drifting

By C. L. TANNER
General Foreman B&B
Panhandle & Santa Fe
Slaton, Tex.

The question raised is of such importance that, with your indulgence, the writer would like to expand the subject to include reasons for the drifting before agreeing, wholeheartedly, with the premise that straightening a pile while driving does result in damage and premature failure.

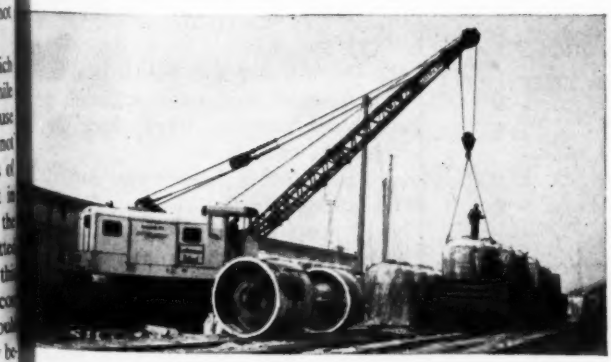
This subject is prominently in the forefront of most of our driving jobs and not all of our "old heads" have discarded the theory that "that one hit a rock and we couldn't hold it in line." Except for a few known unfavorable locations, a pile properly pointed, set, lined, and held with the leads, does not drive out of line.

Irregular faces on the point, which give the pile a chisel-like action while driving, are predominantly the cause of drifting. Also the flat point, if not squarely cut with the driving axis of the timber, gives the same result in direct proportion to the angle of the bevel. Metal points can rarely be fitted in the field on the true axis and for this reason generally are not worth the cost of fitting them. As an aside, I should like to note that our piles are now being headed at the treating plant to fit the driving blocks. It would, I believe, be a further improvement if they could be truly pointed at the same time.

Another contributory cause of drifting is moving the leads to hold every bow in the timber on the mark while

MAGNET: Scrap work. AMERICAN DiesELectric Locomotive Crane.

LOADING: Rail handling. AMERICAN 300 Series Truck Crane.



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What's the answer? (cont'd)

driving, instead of deciding where the line will be at cut-off and holding the leads to that point.

In answer to the question about what to do when a pile drifts off line, it is believed that the pile should be withdrawn and restored if it can be pulled with the pile line. If it cannot, it should be cut off and re-driven if there is enough timber length available. In any case, straightening while driving is the least desirable method of bringing a pile back to line and may result in breakage either above or below ground. Hitting it, while under a strain, is frequently the cause of splitting.

It is the writer's opinion that most cases of shelled outer wood, which shows up free from the heart in after years, are the result of driving while under bending strain. He is not sure but that in some instances strains put on piles by jacking have a similar after-effect, resulting in premature failure. Certainly any strain that causes the grain to splinter or separate is not compatible with our effort to seal out moisture where possible from a heart that may not have been penetrated by treatment.

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Rough track through towns

Why do main tracks on some lines, which ride so well between stations, give a rough ride through towns? Explain. What remedial measures can be taken to correct this condition? Are they economically justified?

Correct drainage

By D. H. YAZELL
Assistant Engineer
Illinois Central
Chicago

Main tracks which ride rough through towns are generally very poorly drained. There are actually three conditions which will prevail through towns and all three are directly or indirectly aggravated by poor drainage.

(1) Street crossings are by their very nature difficult to maintain because of the extra expense of removing and reinstalling crossing timbers and road surface materials. They also are usually very difficult to drain properly.

(2) Switches in a town usually are not set on a standard ballast section. Hence, water can easily accumulate and cause pumping track under the frog and switch point.

(3) All other tangent and curved tracks through the station grounds usually do not provide for a standard ballast section as the ground level in most cases is usually at the top of tie. This causes trouble in producing good drainage conditions.

Most remedial measures will have to do with providing better drainage. One of the most common methods involves trenching, laying perforated drain tile and backfilling with ½-in to 1½-in aggregate. This may be done in station grounds and through switches.

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Chemical Company, Inc.

World Leader in Chemical Weed Control Since 1912

RAILROAD DIVISION HEADQUARTERS
608 South Dearborn St., Chicago 5, Ill.

Bound Brook, New Jersey

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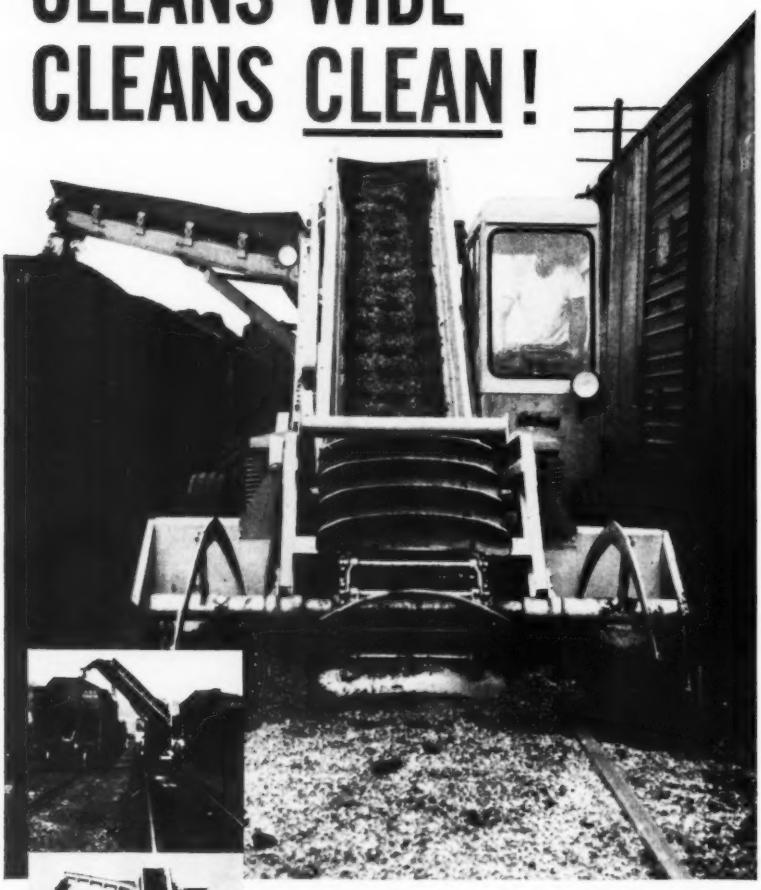
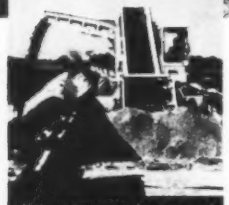
CLEANS WIDE
CLEANS CLEAN!





HiLoader can be moved inside cars to unload material while train is moving.

This Athey Track Cleaner picks up materials or debris at a fast trot. Its 18-foot conveyor spot-casts material as far as 19½ feet—as high as 15′ 7″. It straddles the rails, protecting them with tunnels, loading up to 25 cu. yds. a minute, spot unloading in the highest hopper—*even while both are moving!* Send for complete information—how other RR's load 5 hoppers a day, clear snow, stockpile, clean tracks.

Athey
PRODUCTS CORPORATION
5631 West 65th Street
Chicago 38, Illinois

HiLOADER TRACK CLEANER

Write for booklet today.

Designers and Manufacturers of Heavy-Duty Loading and Hauling Equipment

What's the answer? (cont'd)

a watertight construction while providing for good ballast under the ties and a good well-tamped aggregate for road surfaces. Make sure that all possible locations for water seepage are sealed off as well as possible.

The economics of making any type of drainage betterment must be justified and each location and situation must be given individual study. The speed of trains, type of protection at crossings, number of passenger trains and freight trains all must be given consideration. At stations where all passenger trains stop, it would not be necessary to have as good a track as through small towns where passenger trains go through at a high rate of speed.

Carry over from "old days"

By W. A. SCHUBERT
Division Engineer
St. Louis-San Francisco
Chaffee, Mo.

The question has both humorous and serious answers. I feel qualified to answer it, after 45 years experience as laborer, section foreman, and roadmaster and being brought face to face with this subject on several occasions.

I feel that this is a carryover from the time when the supervision felt that any time a gang was found working in town it was killing time. Most foremen did this type of work, generally speaking, on Wednesdays and Saturdays and tied it in with the work of maintaining switch lights, etc., which was required twice a week. Foremen following this policy were actually showing proper interest in lining up the work. Their efforts, however, were at times not properly evaluated by the supervision.

Foremen years ago had to produce a certain amount of work per man, one of the requirements being to install 10 ties per man in a 10-hour day, inserted, spiked, tamped and dressed up. Because of this they looked for a location where the quota could be easily accomplished. Therefore, tracks through station grounds were shunned since the ties were hard to dig in.

The same held true for all other work and so the track outside of towns was always in better condition. Foremen also worked on a competitive basis and were given premiums for

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NEW EDITION OF AN OLD FAVORITE. 20 pages of the kind of information you want: torquing methods, dimensional standards, specifications for materials and assembly, and other data. 32 illustrations. Also available: Bulletin #35 giving full details on how to torque using "Turn-of-nut" method.

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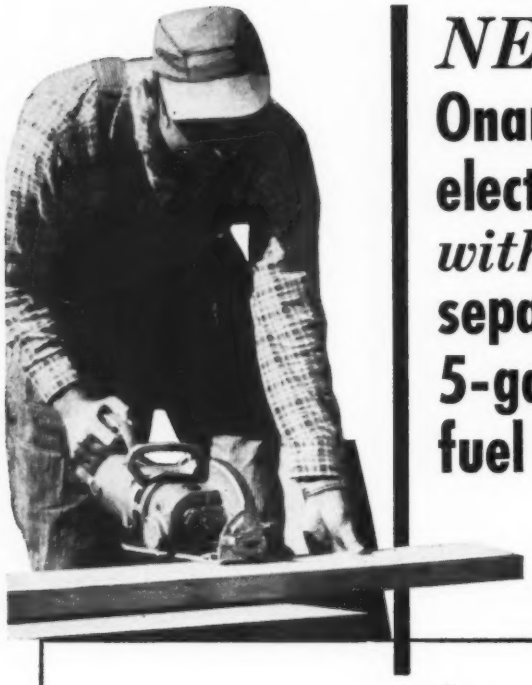

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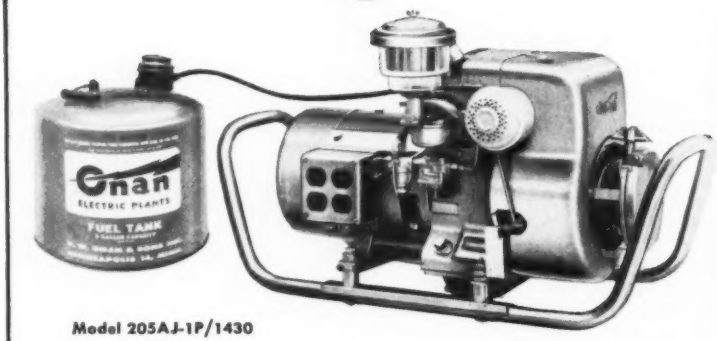
Onan portable electric plant *with* separate 5-gallon fuel tank!



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Supplies 2,500-watts A.C. . . . enough for a crew of three men using electric tools . . . yet it weighs only 140 pounds!

New separate fuel tank holds 2½ times as much as regular mounted tank, saves refueling time. Fuel line is quickly detachable. You can move the plant without carrying along heavy fuel.

Ruggedly-built . . . quick starting

Powered by a dependable Onan 4-cycle, single-cylinder, air-cooled engine. Drip-proof, all-climate Onan generator is directly connected making a compact, rigid, smooth-running power package. No belts or couplings to cause trouble. Aluminum carrying frame, 4 plug-in outlet box, recoil starter and separate fuel tank are standard. Choice of 115, 230, or 115/230 voltages.

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D. W. ONAN & SONS INC.

ELECTRIC PLANTS, GENERATORS, ENGINES, ENGINE-COMPRESSORS
3387 University Avenue S. E., Minneapolis 14, Minnesota

What's the answer? (cont'd)

the best riding section on the division, an award given after an annual inspection by general officers. Therefore, he spent his time on high-speed track and more or less neglected the work through towns, except to clean it up to give a first-class appearance.

I recall an incident that happened on my territory as a roadmaster. The superintendent riding over my track in his private car hit a bad spot in front of the section toolhouse. This upset him considerably. He instructed me to find out from the foreman why he permitted this condition to exist "right in front of his nose," as he put it.

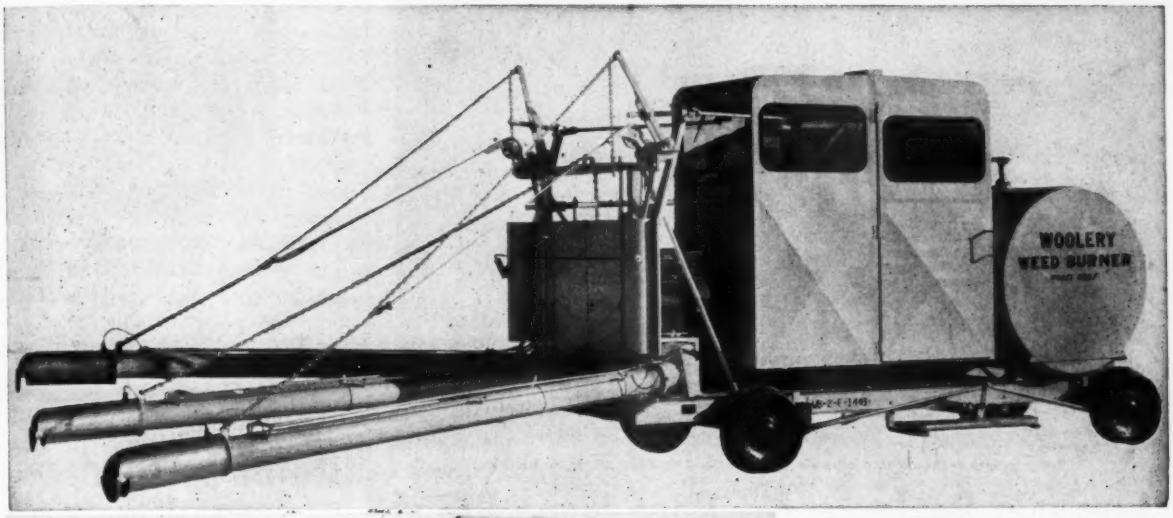
The foreman gave this explanation: "My work time started at 7:00 am and the train the superintendent rode was due by this toolhouse at 7:15 am. Had the 'Old Man' found me in front of the toolhouse 15 min after beginning time, he would have fired me for hanging around the toolhouse." I am sure "old timers" will recall many instances of a similar nature, which existed in the old days and are now in part responsible as a carryover for the riding conditions through towns today.

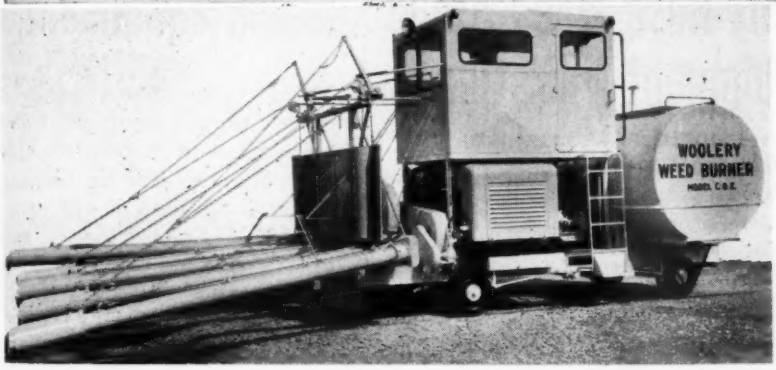
Many supervisors still carry the feeling that they must make a good showing at the expense of neglecting tracks through town. This is done by concentrating their work on track outside of town. Station grounds are difficult to work in due to interference of multiple tracks, station platforms, unloading docks, foul ballast, bad drainage, etc., and so they shy away from this work as long as possible. This is a serious mistake and eventually becomes costly.

With present equipment and mechanized gangs we do not skip any location to avoid tracks that are difficult to work, but carry on our work out of face. Through towns we send a district gang to skeletonize the track where foul ballast exists. This is accomplished by the use of a mechanical track cleaner, bulldozer, or other equipment. Rails and ties are removed, where possible, by diverting traffic through sidings or other tracks. It is then possible to remove all foul ballast down to a good subgrade.

Where bad drainage exists, particularly in front of station platforms, we lay perforated, corrugated pipe to get proper drainage. All ballast is then renewed. Crossings are tied up out of

WOOLERY FOR LOW COST TRACK MAINTENANCE

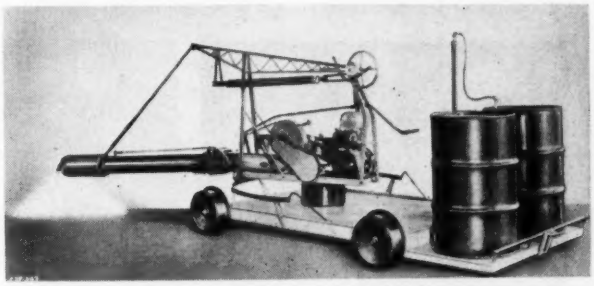




WEED BURNERS

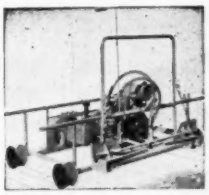
The model WB-2-F (above) has automatic transmission wth torque converter; constant blower speed regardless of rate of travel; an all steel cab with safety glass, two entirely separate brake systems and a final drive with chains and sprockets located outside the wheels for easy adjustment. A separate 15-H.P. air-cooled engine is used to drive the blower. Thus when speed is reduced—such as is necessary in yard or snow melting work—the blower speed maintains the same rate and heat intensity.

The model COE (above) makes use of a torque converter on the propelling engine which gives any speed desired for burning or deadheading. It burns to a width of 25 feet using all five burners. If desired, a second trip can be made with the two outer arms extended to an additional width of five feet on each side. Burners are under separate and instantaneous control of the operator. The two outer arms can be raised or lowered or can swing in or out to coincide with the contour of the ground. Other Woolery Burners include the Model PB-B, 3 burner portable and the AB single burner portable (shown at right).

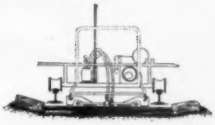


TIE CUTTERS - TIE-END REMOVERS

The Woolery Tie Cutter is a sturdy, light-weight machine that replaces ties with a minimum amount of disturbance to line or surface of the track. A reciprocating saw blade cuts the ties just inside the tie plate on both sides. The center piece is pried out and the Woolery Tie End Remover pushes the ends out thru use of a double-acting, double-ended hydraulic cylinder.



A simple turn of the valve handle causes the two tie ends to be pushed completely clear of the rail.



SPIKE DRIVERS

The Woolery Spike Driver is designed primarily for use by tie renewal gangs. Various other pneumatic tools can also be operated with it. Rubber-tired set-off wheels.

WOOLERY MACHINE COMPANY

29th and Como S.E., Minneapolis, Minn.

See the Aeroquip Booths, #168-169, at the Railroad Track Supply Show, Sept. 14-17, Coliseum, Chicago

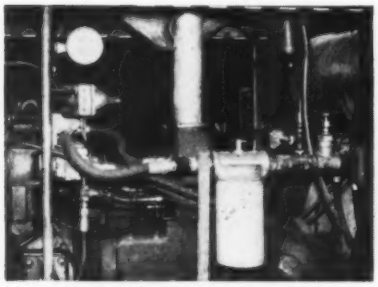
Replacement hydraulic and air lines were installed on this multiple tie tamper.

Aeroquip Replacement Hose Lines Stand Hard Use and Equipment Vibration

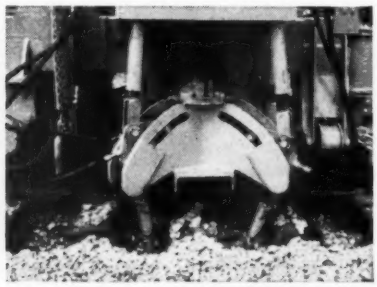
MULTIPLE TAMPER OWNED BY LEADING RAILROAD HELPS TO PROVE THE RUGGED QUALITY OF AEROQUIP HOSE LINES

High quality Aeroquip Hose Lines are selected by many railroads for replacement lines on their heavy-duty equipment. On this multiple tie tamper, for example, dependable Aeroquip Hose and Reusable Fittings were used to replace worn air and hydraulic lines. Field assembled by shop personnel, these hose lines will give long, trouble-free service, and cut future replacement costs.

Get rugged, long-lasting hose lines that can be shop assembled! Order Aeroquip Hose and Fittings from your Aeroquip Distributor, or write us for details.



Aeroquip 1503 Hose Lines are used for hydraulic pressure and return lines on the tie tamper. These lines are subject to vibration.



Air supply lines made of rugged Aeroquip Hose Lines withstand constant vibration and shock, resist damage due to stone abrasion.

Aeroquip

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INDUSTRIAL DIVISION, VAN WERT, OHIO • WESTERN DIVISION, BURBANK, CALIFORNIA
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AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

What's the answer? (cont'd)

face, drained in the same manner, and slightly humped. By doing this the mechanized gang will not have to work through the crossings and can pull their surface to them. This work is tied in with our regular mechanized program of cycle maintenance.

There is no reason why track through towns should be neglected and once it has been reworked in the proper manner it is not difficult to maintain. Economically speaking, track through towns should be well maintained to avoid costly work after continued deferred maintenance.

Use of air-conditioning equipment

What factors determine when air-conditioning equipment shall be installed in a building? Explain. Should there be any uniformity in the type of equipment used at various locations? Why?

Cites determining factors

By I. G. FORBES
Assistant Engineer of Buildings
Illinois Central
Chicago

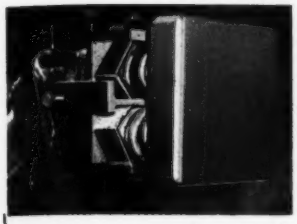
The factors which determine when air-conditioning equipment shall be installed in a building are as follows:

(1) *Geographical location of building.* On our railroad there are up to 520 cooling degree days* in Chicago and on the Western Lines, up to 1200 cooling degree days in the areas south of Chicago to near Jackson, Miss., and up to 2600 cooling degree days from a point near Jackson, Miss., and on the lines south of this location. This and similar information provide a basis upon which recommendations in regard to the installation of air-conditioning equipment can be made.

(2) *Building occupancy.* I think that air-conditioning equipment should be installed in railway-owned or op-

* Cooling degree days are based on the extent the temperature rises above 70 deg F. For example, if the average temperature for one day is 75 deg F, five cooling degrees will be added to the yearly total.

Absorbs shock without disturbing the track



Hayco Shock-free Head with patented inner design builds gentler car handling, longer life into your rigid bumping posts.

Five years of in-track performance highlight these facts about the Hayco Shock-free Head: (1) It effectively dampens impact shock—prolongs bumping post life. (2) It gives the draft gears a better chance to function—minimizes damage to cars and lading. (3) It substitutes compressibility for rigidity—tends to keep cars from bouncing, to prevent derailments.

The Hayco Head (applied with a wrench) fits nearly all bumping posts now used. It saves you money every time it is hit. Ask for Cir 115.

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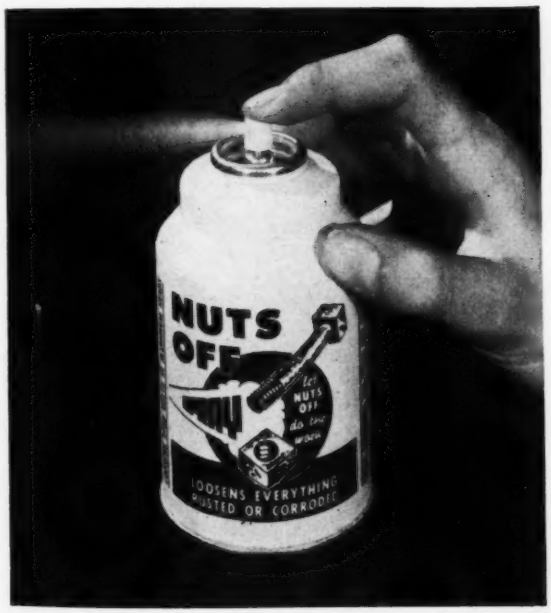
The Brice Hayes Co.
6710 NORTHWEST HIGHWAY
CHICAGO 31, ILL.



New fast acting penetrant and rust solvent . . . saves time, trouble, money and tempers. Available in pressurized cans or regular pints and gallons.

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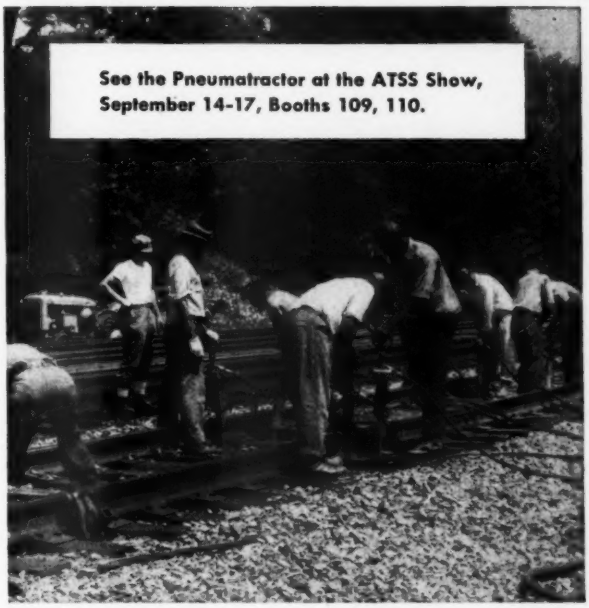

See the Pneumatractor at the ATSS Show, September 14-17, Booths 109, 110.

Now, buy a 125 cfm compressor—with tractor features—for less than any maintenance-of-way portables

Here's the newest, most modern air compressor available—Schramm Pneumatractor—combination compressor-tractor. You get a 125 cfm compressor which you can *drive* like a tractor—to the job and along with the job. It drives on-track, off-track, is perfect for maintenance-of-way! Yet the combination unit costs less than any maintenance-of-way portable compressor alone. Potential uses are unlimited—in fact, railroads using Pneumatractor today say they couldn't get along without it. It's the all-purpose compressor.

Economically speaking, there's not a better buy in air compressors. Better investigate today. Write for your free copy of Bulletin RRP-56.

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MANUFACTURERS OF AIR COMPRESSORS
737 North Garfield Ave. • West Chester, Pa.

Pneumatractor drives right to the job and along with the job. Tows trailer carrying tampers, hoses, spike drivers—all the equipment you need.

What's the answer? (cont'd)

erated hospitals, restaurants, hotels, ticket offices, waiting rooms, assembly and class rooms, general and private offices, and in freight yard and shop offices, in about the order listed. In addition, there are types of computing machines for which an air-conditioned space is required for their proper operation.

(3) *Building Environment.* The location of the building in a manufacturing or industrial zone where there is smoke, fumes, dust, and other particulate matter, also shop, yard, or street noises, may make adequate window and/or louver ventilation impractical. Air conditioning can make these spaces cool, clean, and quiet.

(4) *Building design, materials and orientation.* The design of a new building should coordinate the air-conditioning units with the basic structural module of 8 ft to 10 ft for the windows in order to provide maximum partition flexibility. These units will condition a depth of window wall space to 15 ft or more. The duct layout for the supply of conditioned air to interior spaces should coordinate the supply diffusers and the return air vents with the partition and lighting plan. Buildings 25 years of age and older were usually designed with high ceilings to permit maximum penetration of natural light. It is often possible to install a suspended ceiling beneath the existing one to provide space for air-conditioning equipment. Most existing buildings have sufficient shaft space for this modernization. If not, part of the court space of the building can sometimes be used.

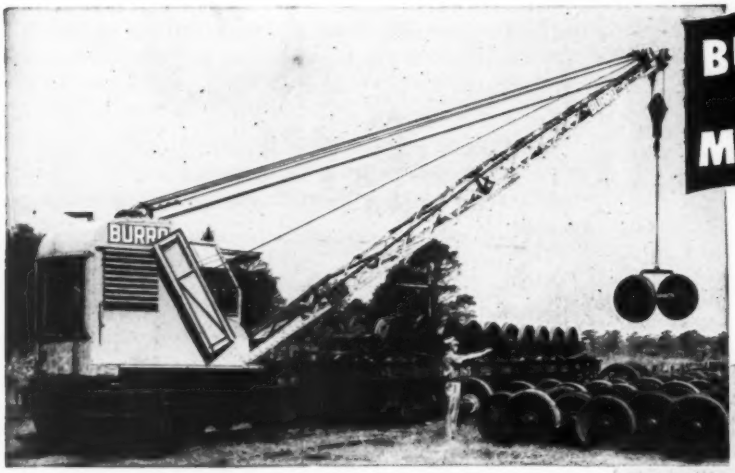
Ventilation under the roof should be provided in the design of a building since this is especially important for keeping the top floor cool. In the case of flat roofs, which are impossible to ventilate, when the structural deck serves as a ceiling for the room below, pools of water or a water spray on the roof deck are helpful. White or light-colored roofs will reflect up to 65 per cent of the heat of the sun compared with as little as 5 per cent for a black roof.

Regarding the building materials, 4 in to 6 in of mass insulation, or its equivalent, is required in the top-floor ceilings, 2 in to 3 in. in all exterior walls, and 2 in or more under the floor of one-story buildings, if there is no basement.

Factors other than the question of summer comfort usually dictate the orientation of the building. If possible, the major walls and glass areas should be on the south where they can be more easily protected from the sun or on the north where the effects of the sun are negligible. Windows on the east, south and west exposures, which are shaded by roof overhangs, awnings, or other horizontal projections, will receive only 25 per cent to 35 per cent of the heat from the sun that they would otherwise receive.

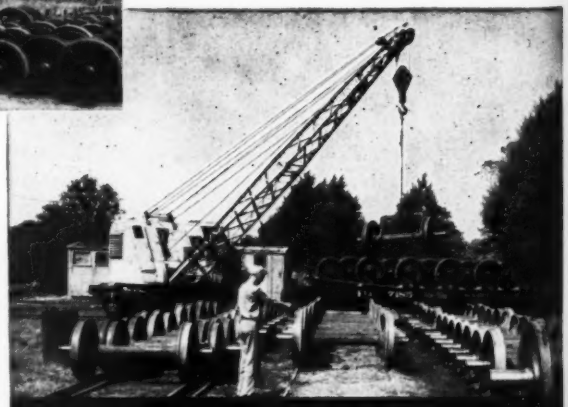
Vertical sunshades, such as fixed or movable louvers on the outside of the windows, can be even more effective against the rays of the early morning and late afternoon sun. Louver-type insect screens on south windows are about 85 per cent effective in reducing the heat load but only 25 per cent to 55 per cent effective on the east and west.

Venetian blinds and other shades on



BURRO WORK POWER means... MORE EARNING POWER

Unloading car wheels with a Burro. The Burro moved the flat car into position and will haul it away when wheels are unloaded.



This job—handling wheel assemblies in and out of storage—won't support high costs. That's why a Burro is doing the job.

***Any* job—on the line, in the yards, or Stores Department—can be done profitably with a Burro because Burros are fast, efficient workers with hook, magnet, tongs, bucket or dragline. Fast travel speeds and heavy draw bar pull enable the Burro to go to the job in a hurry—and even haul its own cars with it!**

Write for Bulletins and more information about Burro cranes. There is no obligation.

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STRENGTH in all phases of manufacture—made of heavy alloy spring steel, carefully formed, heat treated, and pre-tested before shipping. **DURABILITY** is inherent in the Improved Gautier. Spring power plus take up allows use on new or old rail. Designed so it cannot be overdriven and lasting the life of the rail. It affords . . . **ECONOMY** to the user. Applied with sledge, maul or machine

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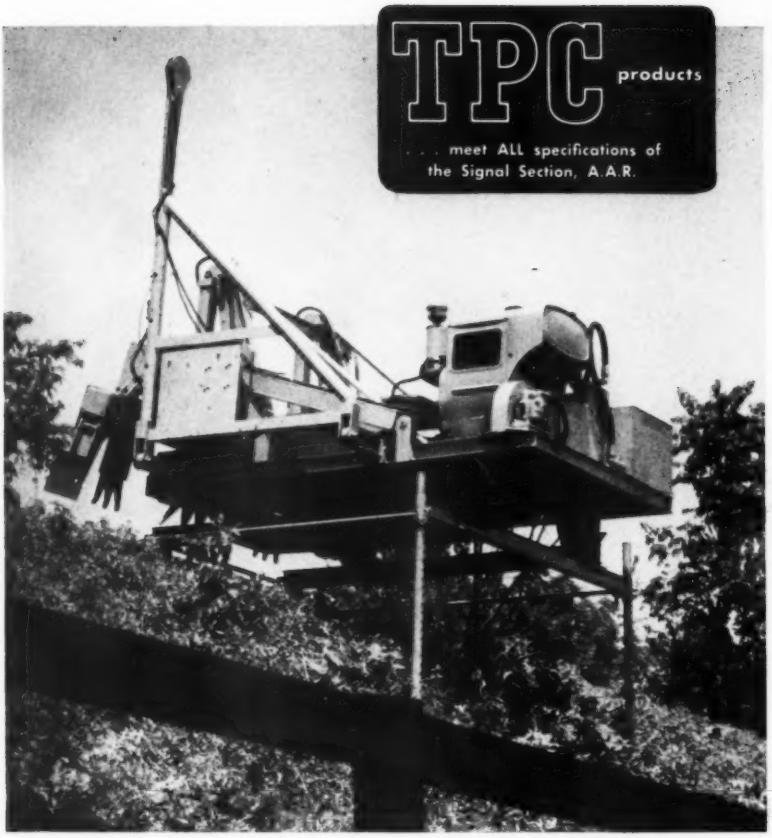

UNIVERSAL SET-OFFS THAT DO THE JOB!

Shown in the above photo is the Model M 100-15 Universal Set-Off with the Kershaw cribber and tie remover. Notice the extreme slope of the berm, and how this TPC Universal Set-Off adapts to these unusual conditions. It takes only 2 men approximately 10 minutes to completely set up this TPC Universal Set-Off ready for use.

Here is a real time and labor saver, that is strong, durable and easily transported from site to site.

TPC M 400-5 SET-OFF

This set-off is designed to accommodate weights up to 40,000 lbs., and is shown here with the Fairmont Ballast Regulator. Write today for additional set-off information.

TRANSPORT PRODUCTS CORPORATION

3008 MAGAZINE ST. • LOUISVILLE, KY.

the inside of the east, south and west windows are less effective than outside protection; however, they can exclude up to 40 per cent of the heat of the sun.

Trees, shrubs, walls and fences also provide good protection against the sun in its east and west positions but are usually not practical for the majority of railway buildings.

(5) *Air-conditioning costs.* The installation costs can vary from $600 to $1600 per ton and the operating costs from $25 to $65 per ton per year. The annual cost, including amortization and operation costs, will vary from around 30 cents per square foot per year to more than $1.00 per square foot per year. In the larger buildings probably most central air-conditioning installations will cost in the $1000 to $1200-per-ton range with operating costs of around $55 per ton per year. Figuring a 20-year amortization period and money at 5 per cent will give an amortization and operating cost of from 50 cents to 55 cents per square foot per year.

The psychological and physiological aspects of air conditioning are difficult to evaluate; however, there is no question but that an environment having temperatures of 75 deg F to 80 deg F and relative humidities of less than 60 per cent has a beneficial effect on an employee's work output. In many cases without air conditioning the individual office worker has a very restricted control of the cooling aspect of his environment since changes in window openings and ventilating fans affect others as well as himself.

(6) *Building utilization.* It seems to me as if the number of hours a day that a building is occupied should be at least a minor consideration. Other things being equal, buildings used 24 or 16 hr a day should have a priority for air conditioning over those used only 8 hours per day.

As to maintaining any uniformity in the type of equipment used at various locations, I would say that if the system is to be maintained by company electricians there should be as much uniformity as possible in order to reduce the number of service manuals with which they are required to be familiar and to keep the stock of spare parts to a minimum.

If the air-conditioning system

BIRD
& SON, inc.
Established 1795
East Walpole, Mass.

mile . . .

after mile . . .

after mile . . .

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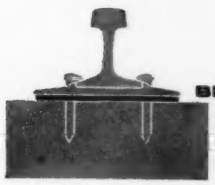
Bird Self-Sealing Tie Pads positively seal out moisture and abrasive materials from the vulnerable underplate and spike-hole areas. They extend average tie life at least 50%. For proof positive, write for booklet to Department HTS.



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What's the answer? (cont'd)

maintained by a contractor, uniformity in the type of equipment used is not as important.

In some cases it is possible to send damaged air conditioners, upon which freight claims have been paid by the railroad, to a central point for repair and installation in company-owned buildings as needed. In this event not much control over the type of equipment installed is possible.

In new stations and offices

By A. E. Drabnick
Engineer of Buildings
Louisville & Nashville
Louisville, Ky.

I strongly recommend installation of air-conditioning equipment in new passenger stations, offices of all types, retarder towers and similar structures. Major remodeling of such buildings also should include air-conditioning equipment.

The type of equipment installed depends on requirements. Installation in L&N buildings range from window units to a 600-ton system in the general office building.

Standardizing on one manufacturer's equipment would perhaps enable the company maintenance force to become more efficient in making adjustments and servicing the equipment. However, for various reasons installation cannot be confined to one manufacturer.

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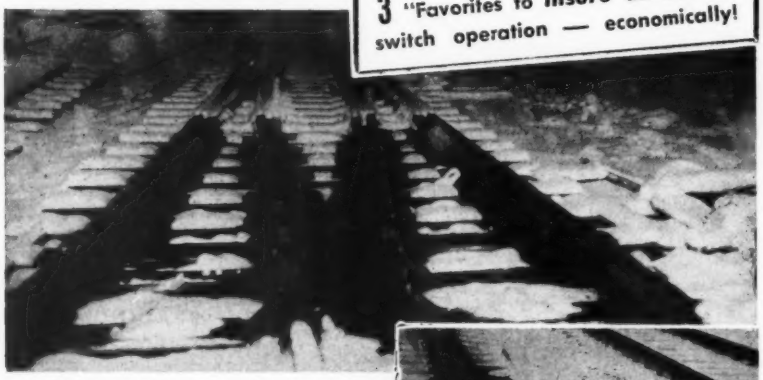

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Ballast for 'skin-lift' operations

Where the track is being tightened in a "skin-lift" surfacing operation, how much additional ballast, if any, should be needed per mile? If needed, should this ballast be unloaded before or after the tamping operation?

Depends on conditions

By D. H. Yazell
Assistant Engineer
Illinois Central
Chicago

Where track is being tightened in a "skin-lift" surfacing operation, the addition of ballast depends mainly on the amount of ballast in the track before the lift. When making a skin-lift, it must be assumed that the present ballast is in good condition. If the ballast has been maintained at the same or slightly higher level than the standard section, and if the standard section is at least within 1 in of the top of tie at the ends, additional ballast would not be necessary.

Where standard ballast sections are more than 1 in below the top of tie, additional ballast is added after the skin-lift has been made. If a ballast section is too lean, and weather or track conditions are such that the track may buckle, ballast should be added before the surfacing operation is scheduled to begin.

In any event, when unloading ahead of a surfacing job only enough ballast should be added to make the operation safe, making sure that enough ballast is added for a minimum dress. Following this procedure will avoid the necessity of unloading again after

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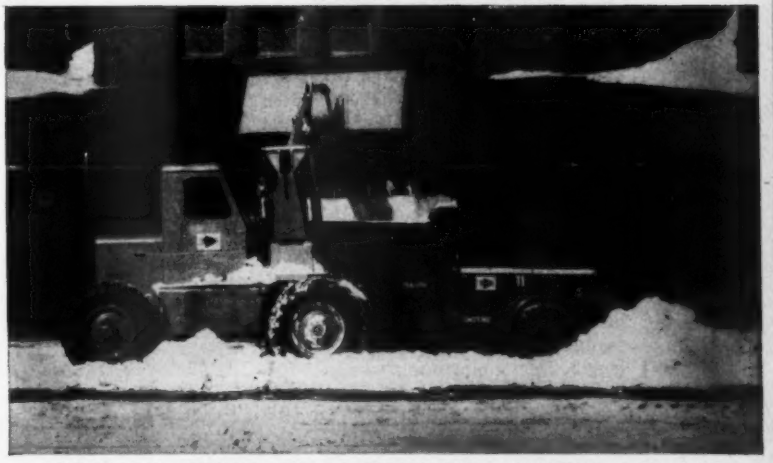

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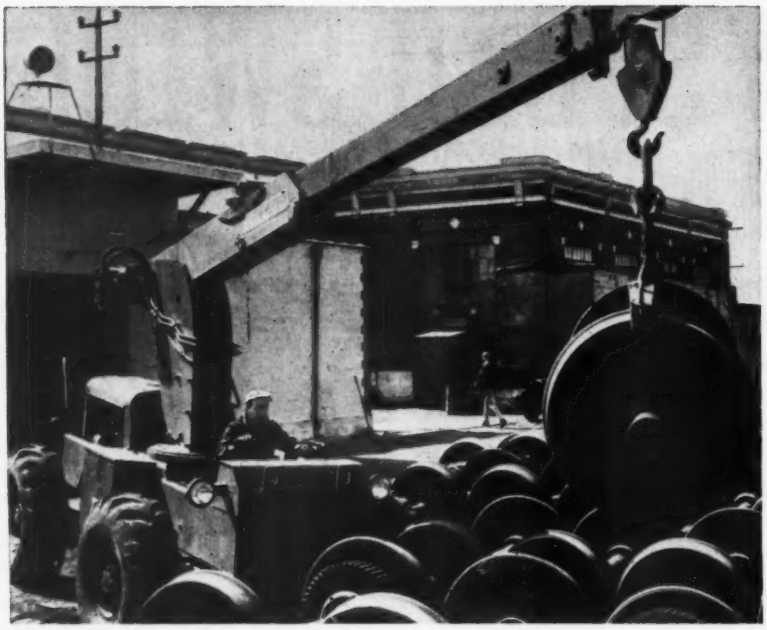

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What's the answer? (cont'd)

the lift. On this type of surfacing operation, too much ballast in cribs will hinder efficient tamping. In most cases, ballast, if needed, should be unloaded after the tamping operation.

Use ballast cars and pans

By P. J. Stinson
District Maintenance Crew Foreman
Boston & Maine
Enfield, N. H.

The amount of stone required per mile when making a "skin lift" would be difficult to determine. There are many factors that enter the picture. First the track to be surfaced should be thoroughly inspected by the supervisor in charge to locate the spots where ballast is scarce. Ballast should then be distributed at these locations using a track crane and cars equipped with ballast pans.

After the lift is completed the track should be gone over again with the track crane and ballast cars, still equipped with pans, to correct any locations where the shoulder is weak and to fill any cribs that should require more ballast.

Probably 300 cu yd of ballast per mile would be a minimum requirement, if the track is in fair condition. The amount of ballast to be used, I would say, depends largely on the quality of work done on the original project of installing the ballast and on the condition of the track as to surface and cross level.

Unload prior to work

By R. E. Kleist
Assistant Engineer Tests—M/W
Pennsylvania
Altoona, Pa.

It is generally agreed that a standard minimum ballast section must be maintained on any track. Ballast to provide for restoration of the ballast section after a "skin-lift" may be unloaded just prior to the operation or as much as two or three years before it, depending on track conditions and on railroad policy.

If track is maintained on a cycle basis, with heavy maintenance and surfacing operations programmed to alternate at two to three-year intervals, it may be practical to unload bal-

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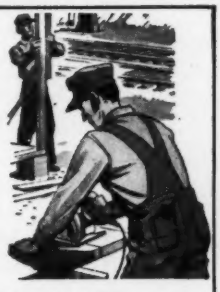

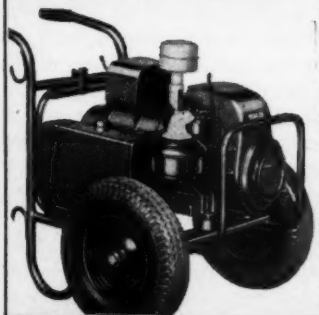

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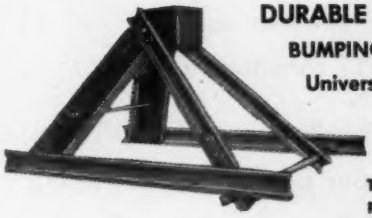

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What's the answer? (cont'd)

last in excess of heavy maintenance requirements in order to provide for later surfacing operations. This practice will realize a reduction in work-train expense, but may be undesirable where track drainage is a problem.

When there is insufficient ballast in track to provide for a skin-lift; that is, a 1 to 1½-in raise, additional ballast must be provided. A raise of 1 in will require 170 tons of stone ballast per mile or about three cars, while a raise of 1½ in will require about 250 tons or nearly five cars. These figures are based on practical experience and can be verified by calculation of actual volumes to be filled with ballast.

Before the advent of mechanized cycle-maintenance gangs, it was the practice to maintain stone-ballasted tracks manually with pneumatic tamping tools or with tamping picks. To tamp a tie properly it was necessary for the trackmen to see the bottom of the tie and the stones which they put under it. An excess of ballast in the track resulted in either inferior tamping or increased expense or both. As a result the track was surfaced and backfilled manually with existing stone from shoulders and inter-track spaces. Additional ballast was then unloaded as required to restore the standard ballast section.

With the use of mechanized surfacing gangs nearly all phases of tightening or raising track are done mechanically and the sequence of unloading ballast has been reversed. Additional ballast required for a mechanized skin-lift must be unloaded prior to raising in order to insure an ample supply of ballast in the cribs for tamping and to provide ballast for mechanical restoration of the ballast section. Unloading ballast after tightening track with a mechanized gang will reduce efficiency and increase the cost of the operation.

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Determined by roadmaster

By R. H. CARPENTER
Engineer Maintenance of Way
Missouri Pacific
St. Louis, Mo.

Where out-of-face tamping is performed the track is raised not to exceed 1 in and the work is done at locations where the full ballast section is maintained. This operation is performed between the cycles of out-of-face surfacing and is carried out by a minimum gang using existing ballast. After the tamping operation the ballast is equalized and, if additional ballast is required, it is then applied.

The amount of ballast required per mile varies depending on the stability of the roadbed and other factors. Where it has been necessary to spot tamp and ballast was used, or where the ballast section has deteriorated from other causes, such places will be filled in with a sufficient amount of ballast to maintain the surface and line of the tamped track. This ballasting operation is determined by the roadmaster and ordered accordingly. This seldom exceeds five cars per mile.

In very few cases where the ballast section is not sufficient for tamping operation, ballast is unloaded prior to the out-of-face tamping. However, this condition exists at very few locations where this operation is programmed, as the ballast section will normally provide enough ballast for the tamping operation.

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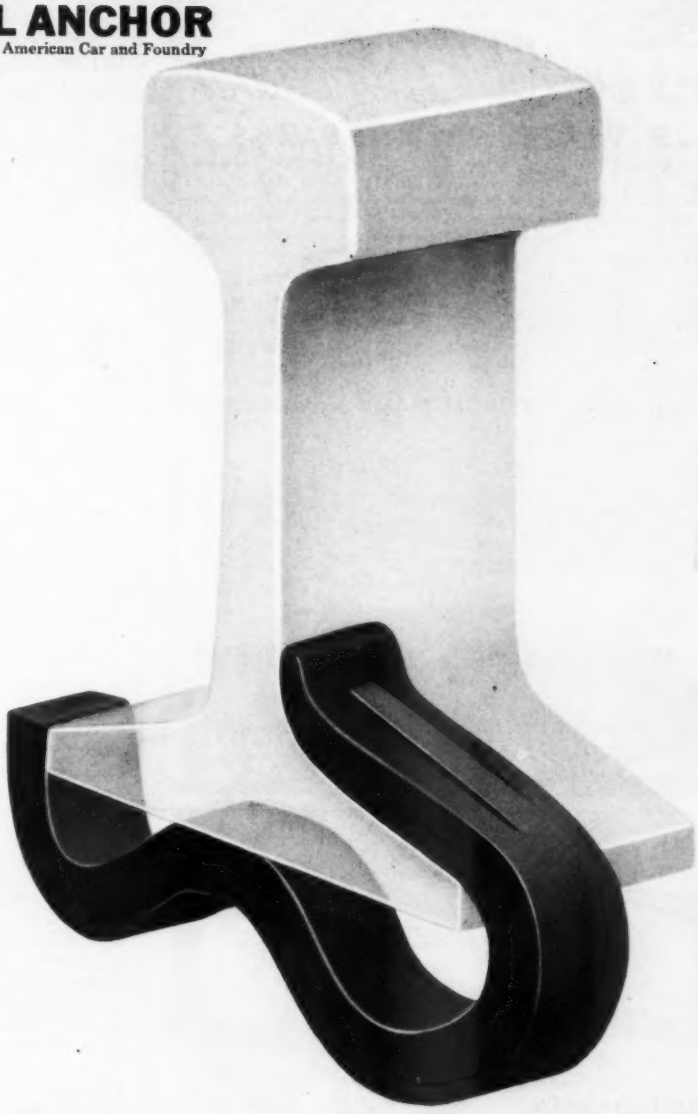

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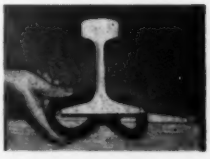

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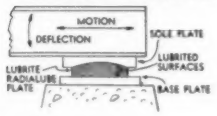

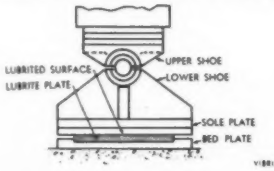

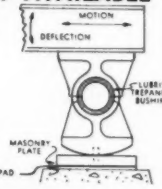

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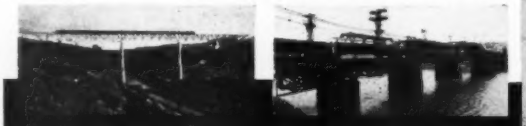

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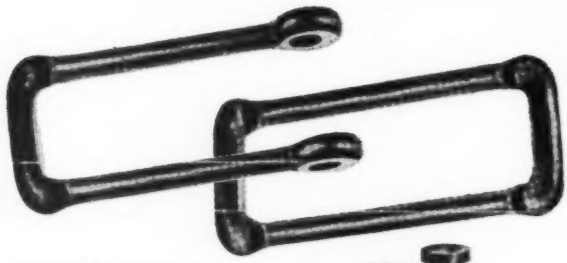

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To the Editor

Wants labor management to "modernize its approach"

TO THE EDITOR:

The article in your May 1959 issue entitled "M/W employees . . . What the Brotherhood wants," which was an interview with the president of the Brotherhood of Maintenance of Way Employees, inspires serious thought and appraisal.

Railroading is a service business — service to shippers, passengers and head-end customers. Since 1930 the railroads' *share* of the total inter-city freight traffic declined from 75 per cent to 46 per cent — down 29 points. Their share of passenger traffic declined from 68 per cent to 30 per cent — down 38 points. Railway employment declined from 1.5 million to 0.84 million — down 44 per cent.

Against this background of major declines, I continue to look for rail-labor management to modernize its approach — to share rail management's concern about the industry's loss of market position, its resultant financial deterioration, and its unreasonable and inequitable treatment by all levels of government.

Who can improve the railroad workers' lot, unless the railroad business is made to improve? How can significant improvements in business be achieved without greater productivity and reasonable and equitable legislation and taxation — to reduce costs and improve service — to compete more successfully—to increase railroad traffic and railroad revenues?

Note that not once in the interview report were shippers, passengers and head-end customers — and what THEY want — mentioned. This omission may typify the most serious weakness in railroading. The first purpose of a business is to create and retain customers, because customers are the *source* of revenues, which are essential to all concerned. Here, it seems to me is the big opportunity for rail-labor management to exert constructive leadership — to help reverse the downward traffic trends.

I am utterly convinced they can be reversed by effective marketing, backed by satisfactory service and reasonable costs. Certainly, many railroad workers can be brought to understand this essential chain of events — the surest way to job security.

K. R. Ross
Manager
Trans. Market Development
User Industries Sales Dept.
General Electric Co.
Schenectady, N.Y.

Biographical briefs (cont'd)

(*Continued from page 10*)

he left the NP and entered the service of the DM&IR as structural engineer at Duluth. In 1949 he was advanced to principal assistant engineer. Mr. Rhode was promoted to assistant chief engineer in 1958, the position he held at the time of his recent promotion.

Burton J. Worley
Milwaukee Road

Gerald D. Scheer
Union Pacific

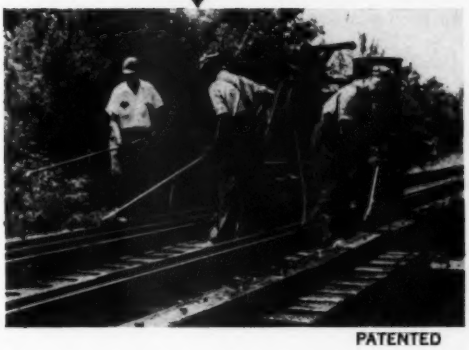
Burton J. Worley, 41, who was recently promoted to engineer maintenance of way-track, of the Milwaukee Road at Chicago (*RT&S,* June, p. 10), was born at Aredale, Iowa, and graduated from Iowa State College in 1939 with a Bachelor of Science degree in civil engineering. He entered the service of the Milwaukee Road in 1939 as a rodman at Chicago, serving subsequently as an instrumentman there and draftsman and assistant engineer at Butte, Mont. In April 1947 he was promoted to assistant division engineer at Butte and six months later was advanced to division engineer at Aberdeen, S. D. Mr. Worley was transferred to Chicago in 1950 and further promoted to principal assistant engineer there in 1953. He was appointed assistant chief engineer—signals and communications, four years later, the position he held at the time of his recent promotion.

Gerald D. Scheer, who was recently promoted to division engineer on the Union Pacific at Los Angeles, Calif. (*RT&S,* June, p. 10), was born at Ellis, Kan., and graduated from Kansas State College with a Bachelor of Science degree in mathematics. Mr. Scheer entered the service of the UP in 1949 as a draftsman and was promoted to instrumentman at Kansas City, Mo., in June 1953. In September of that year he was advanced to engineering inspector there, serving also in this capacity at Las Vegas, Nev. Two years later he was further promoted to assistant engineer at the latter location. He was serving in this capacity at Kansas City at the time of his recent promotion.

Robert J. Kemper, 34, who was recently promoted to district engineer on the Missouri Pacific at Little Rock, Ark. (*RT&S,* June, p. 10), was born at Johnston City, Ill., and graduated from the Missouri School of Mines in 1949 with a Bachelor of Science degree in civil engineering. Mr. Kemper entered the service of the MP in that year as a rodman at Poplar Bluff, Mo., and two years later was promoted to instrumentman in the chief engineer's office at St. Louis, Mo. He was advanced to assistant roadmaster at Poplar Bluff in 1952 and to assistant division engineer at Kansas City, Mo., two years later. In 1956, Mr. Kemper was further promoted to division engineer at Falls City, Neb., the position he held at the time of his recent promotion.

Robley H. Morrison, 47, who was recently promoted to vice president and chief engineer of the Lake Superior & Ishpeming at Marquette, Mich. (*RT&S,* July, p. 10),

Here's the coating that makes this bridge last one-third longer!



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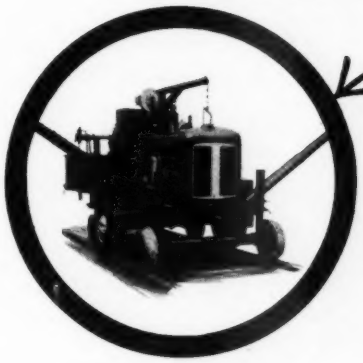

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Biographical briefs (cont'd)

was born at Rumford, Me., and graduated from the University of Maine with a Bachelor of Science degree in civil engineering. Mr. Morrison entered railway service in 1940 as superintendent of bridges and buildings of the Bangor & Aroostook at Houlton, Me. Five years later he was promoted to principal assistant engineer. He was advanced to assistant chief engineer in 1952 and chief engineer the following year. Mr. Morrison joined the Lake Superior & Ishpeming in 1957 as chief engineer at Marquette, Mich., the position he held at the time of his recent promotion.

Beecher F. Houser, 55, who was recently promoted to supervisor track on the Chesapeake & Ohio at Maysville, Ky. (*RT&S*, July, p. 10), was born at Bristol, Va. He entered railroad service with the C&O in 1923 as a section laborer, being promoted to assistant extra force foreman two years later. In 1939 he was further promoted to section foreman. Mr. Houser subsequently served as assistant cost engineer and assistant supervisor track. He was serving in the latter capacity at the time of his recent promotion.

William J. Wanamaker, 39, who was recently promoted to assistant to chief engineer of the Canadian National at Toronto, Ont. (*RT&S*, June, p. 10), was born at The Range, N. B., and graduated from the University of New Brunswick in 1949. He entered the service of the CNR in 1949 as a junior research engineer with the research and development department at Montreal. Mr. Wanamaker was appointed instrumentman with the operating department there two years later and assistant engineer, also at Montreal, in 1952, subsequently serving in this capacity at Moncton, N. B. He was promoted to assistant office engineer at Toronto in 1955 and assistant division engineer there the following year. In 1957, Mr. Wanamaker was advanced to office engineer, also at Toronto, the position he held at the time of his recent promotion.

Hal B. Orr, 45, who was recently promoted to assistant chief engineer on the Chesapeake & Ohio at Detroit, Mich. (*RT&S*, July, p. 10), was born at Muncie, Ind., and graduated from Purdue University in 1936 with a Bachelor of Science degree in civil engineering. Mr. Orr entered railway service in May 1936 as a rodman with the Wabash. Two months later he joined the C&O as a chainman at Richmond, Va. The following year he was promoted to rodman there. He subsequently was advanced to draftsman at Richmond in 1939; assistant cost engineer at Chillicothe, Ohio, in 1941, being transferred to Covington, Ky., the following year and assistant supervisor track at Chillicothe in 1945. The following year he was promoted to supervisor track at Pikeville, Ky. In 1947 he was further promoted to assistant division engineer at Clifton Forge, Va., being transferred to Russell, Ky., in 1954. Mr. Orr was advanced to division engineer at Clifton Forge two years later, the position he held at the time of his recent promotion.

Edward F. Gifford, 65, who recently retired as assistant engineer of structures of the New York Central at New York (*RT&S*, July, p. 10), was born at New York and received his higher education at Pratt Institute, Columbia University and Brooklyn Polytechnic Institute. From 1912 to 1917 he was employed by two steel firms as a structural detailer; by a consulting engineer designing and detailing structures in connection with the Pennsylvania Railroad's electrification program, and by the New York State Public Service Commission designing and detailing structural steel and reinforced concrete structures for the New York subway systems. Mr. Gifford entered the service of the NYC in 1917 as a draftsman, being promoted to senior draftsman two years later. He was subsequently promoted to designer in 1920, assistant engineer in 1922 and special engineer in 1945. Mr. Gifford was advanced to assistant engineer of structures at New York in 1953, the position he held at the time of his recent retirement.

James L. Alvord, 46, who was recently promoted to senior staff engineer of the Chesapeake & Ohio at Cleveland, Ohio (*RT&S*, Aug., p. 10), was born at Ionia, Mich., and graduated from Michigan State University in 1936 with a Bachelor of Science degree in civil engineering. Mr.

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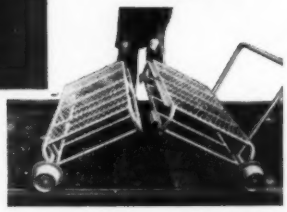

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James L. Alvord
C&O

Jay M. Gilmore
NYC

Alvord entered railroad service in 1936 with the Pere Marquette, now part of the C&O, as an inspector at Grand Rapids, Mich. He subsequently served as instrumentman and assistant engineer, both at Detroit, Mich., and track supervisor at Grand Ledge, Mich. In 1943 he entered the U.S. Army, serving as a captain with the 723rd Railway Operating Battalion in the European Theatre. Mr. Alvord returned to the C&O in 1946 and was appointed assistant engineer at Detroit. The following year he was promoted to assistant division engineer at Saginaw, Mich., being advanced to division engineer there two years later. In 1951 he was appointed district personnel officer at Grand Rapids. Mr. Alvord was appointed division engineer there in 1953, the position he held at the time of his recent promotion.

Jay M. Gilmore, 36, who was recently promoted to methods engineer-bridges and buildings, on the New York Central at New York (*RT&S,* July, p. 10), was born at College Corner, Ind., and graduated from Ohio State University in 1948 with a Bachelor of Science degree in civil engineering. Mr. Gilmore entered railway service with the NYC in 1948 as an assistant engineer at Springfield, Ohio. He was promoted to office engineer at Mattoon, Ill., in 1953, assistant track supervisor at Terre Haute, Ind., in 1954 and assistant district engineer of structures at Indianapolis, Ind., in 1955. Two years later he was advanced to division engineer there, the position he held at the time of his recent promotion.

Ronald H. Wilson, 26, who was recently promoted to assistant engineer on the Clinchfield at Erwin, Tenn. (*RT&S,* July, p. 10), entered railroad service in 1948 after employment with two consulting engineers at Knoxville, Tenn. He was born at Knoxville and received his higher education at both the Tennessee Polytechnic Institute and University of Tennessee.

Otis G. Wilbur, 67, who recently retired as assistant engineer of bridges and buildings of the Baltimore & Ohio at Baltimore, Md. (announced elsewhere in this issue), was born at Baltimore and graduated from the Baltimore Polytechnic Institute in 1911. Mr. Wilbur entered the service of the B&O in September of that year. He served in various positions from axeman to transitman and draftsman until 1914 when he joined the valuation department of the Southern. Returning to the B&O two years later he was appointed chief of party in the valuation department. He subsequently served as chief draftsman, valuation building engineer and cost engineer. Mr. Wilbur was promoted to assistant to engineer buildings in

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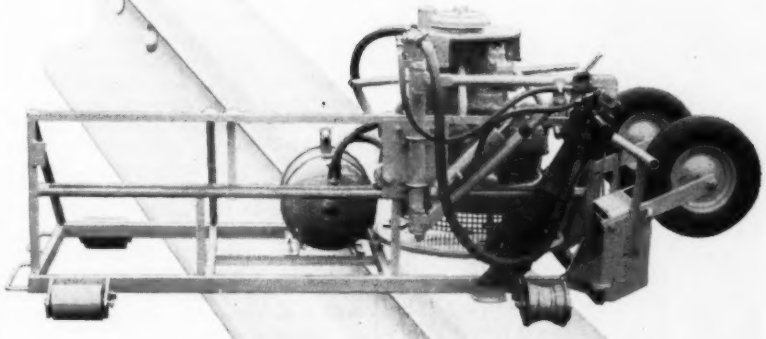

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Biographical briefs (cont'd)

Otis G. Wilbur
B&O

John H. Spicer
CNR

1944 and assistant engineer buildings four years later. He was further promoted to assistant engineer of bridges and buildings in 1952.

John H. Spicer, 35, who was recently promoted to chief of engineering economics of the Canadian National at Montreal, Que. (*RT&S*, July, p. 10), was born at Moose Jaw, Sask., and graduated from the University of Manitoba in 1948 with a Bachelor of Science degree in civil engineering. Mr. Spicer entered the service of the CNR in 1948 as an instrumentman with the bridge department. Two years later he was appointed acting division engineer at Winnipeg, Man., serving also in this capacity at Port Arthur, Ont. In 1951 he was promoted to division engineer at Prince Rupert, B.C., being transferred to Kamloops, B.C., two years later. Mr. Spicer was further promoted to district engineer at Edmonton, Alta., in 1955. He was appointed assistant general supervisor of budgets at Montreal two years later. In 1958 he was advanced to chief budget officer there, the position he held at the time of his recent promotion to chief of engineering economics.

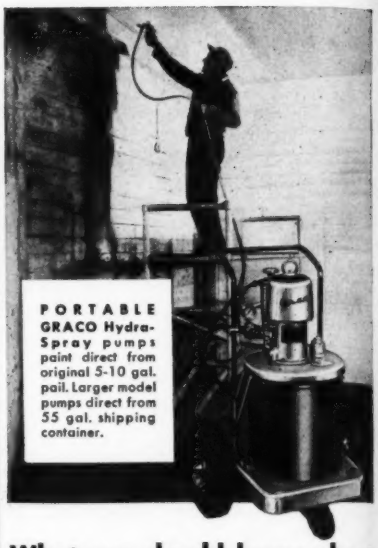
Association News

American Railway Engineering Association

The second edition of the association's engineering recruitment brochure has been prepared and a run of 28,000 has been completed for early distribution to universities and colleges. This is a two-color, well-illustrated booklet designed to stimulate the interest of college students in railroading as a career. Extensive revisions were made in preparing the new edition. It is to be distributed free to college students in the United States and Canada in September.

Railway Tie Association

The annual convention of this association will be held at the Netherland-Hilton hotel, Cincinnati, Ohio, October 28-30. At the annual luncheon, to be held on October 29, the principal speaker will be C. J. Fitzpatrick, president, Chicago & North Western. Other details of the program have not been announced.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Association of Track and Structure Suppliers

The annual meeting of this association will be held at 10:00 am, Thursday, September 17, in the Coliseum at Chicago. The meeting will take place in the ballroom on the second floor at the south end of the building. Officers for the ensuing year will be elected and routine business will be transacted.

Supply Trade News

DEARBORN CHEMICAL COMPANY—**William F. Johnson** has been appointed to the newly created position of general sales manager of this company. Mr. Johnson was formerly vice president and secretary of **Chapman Chemical Company,** Memphis, Tenn.

LE TOURNEAU-WESTINGHOUSE COMPANY—**J. E. Sheets,** manager of the company's Washington (D.C.) office, has been promoted to eastern sales manager, succeeding **D. H. Mitchell,** resigned, according to an announcement by **W. E. Hendricks,** domestic sales manager. Mr. Sheets will make his headquarters at Peoria, Ill. **D. K. Heiple** has been appointed manager of the newly formed Sales Development Department of this company.

PULLMAN-STANDARD CAR MANUFACTURING COMPANY—This company has announced that effective July 1 it has become a division of its parent company, **Pullman, Inc.,** and is now known as **Pullman-Standard.**

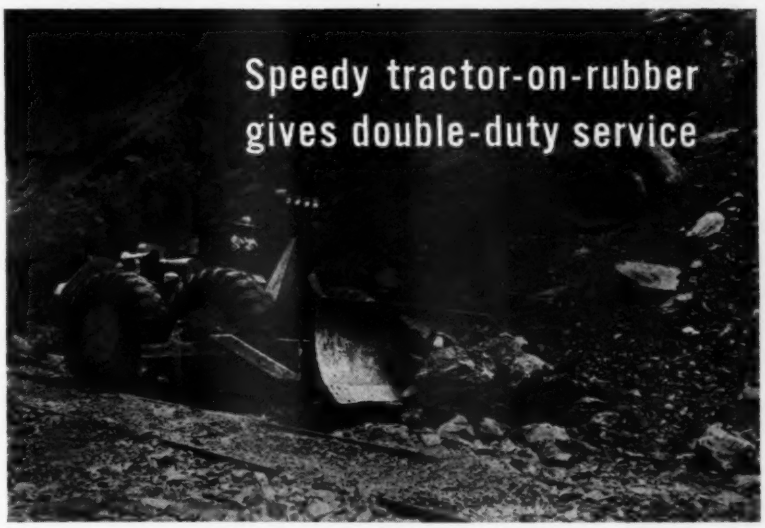
SIMMONS-BOARDMAN PUBLISHING CORPORATION—**Gus Welty,** regional news editor of Railway Age at Chicago, has been promoted to western editor of this magazine with headquarters as before. Mr. Welty succeeds **Wallace W. Abbey** who has resigned to become assistant to vice president—public relations, of the Soo Line at Minneapolis, Minn.

SPERRY PRODUCTS, INC.—This company has announced the expansion of its sales program and the establishment of four sales districts. New district managers are as follows: **Tracy W. McFarlan,** Eastern district, New York; **Ralph H. Frank,** Central district, Pittsburgh, Pa.; **James M. Dickey,** Midwest district, St. Louis, Mo.; and **Carl B. Haugh,** Western district, Los Angeles, Calif. Each will report to **Henry T. Lowell,** general sales manager. **George Campbell** has been appointed marketing research coordinator.

J. E. Sheets
L-W

Gus Welty
Railway Age

Speedy Tournatractor can often get to an emergency area . . . do its job . . . be on its way back . . . before work-crew and gang train could be organized. Equipped with optional regulation RR coupler, unit spots suddenly-needed cars . . . pulls cars out of danger areas.



for day-in, day-out hard labor . . . or fast emergency service

You save money when you buy maintenance equipment that can do more than one job . . . with a minimum of personnel. Most maintenance-of-way machines are strictly one-purpose. But when choosing *tractors,* you have basically different types from which to select. A careful decision here can save your railroad a lot of money.

Compare Tournatractor® with any tractor. This 218 hp LeTourneau-Westinghouse unit has muscle needed for heavy dozing or push-pull jobs. It offers excellent traction — on wide, low-pressure tires — and *more* engine horsepower than the best-known crawler-tractors in its price class. At speeds over 2 mph, it matches or betters drawbar pull of any comparative crawler.

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Assets that make Tournatractor a *better* buy are *speed* and *mobility.* This machine *goes anywhere,* under its own power . . . *on* or *off* rail right-of-way . . . at speeds to 17.2 mph — 2 to 3 times the top speed of most crawlers.

What this means to you is this: When you choose Tournatractor, you get a do-it-all tractor for regular field work, plus a top-flight emergency tool *at no extra cost.* No matter *where* this unit is working, a phone or radio message sends it speeding to a washout, mountain slide, or other emergency area anywhere along your trackage.

On its way immediately . . .

You need no trailer, flatcar, loading crew, or special planking. The operator hops on, and goes . . . via the *shortest* route. Tournatractor straddles rails, rolls along tie-ends. It crosses trestles . . . goes through tunnels, along highways, or cross-country.

Boosting its work capacity are 4-wheel drive . . . instant gear-shift with constant-mesh transmission . . . torque converter . . . 4-wheel disc-type air brakes . . . fingertip electric controls.

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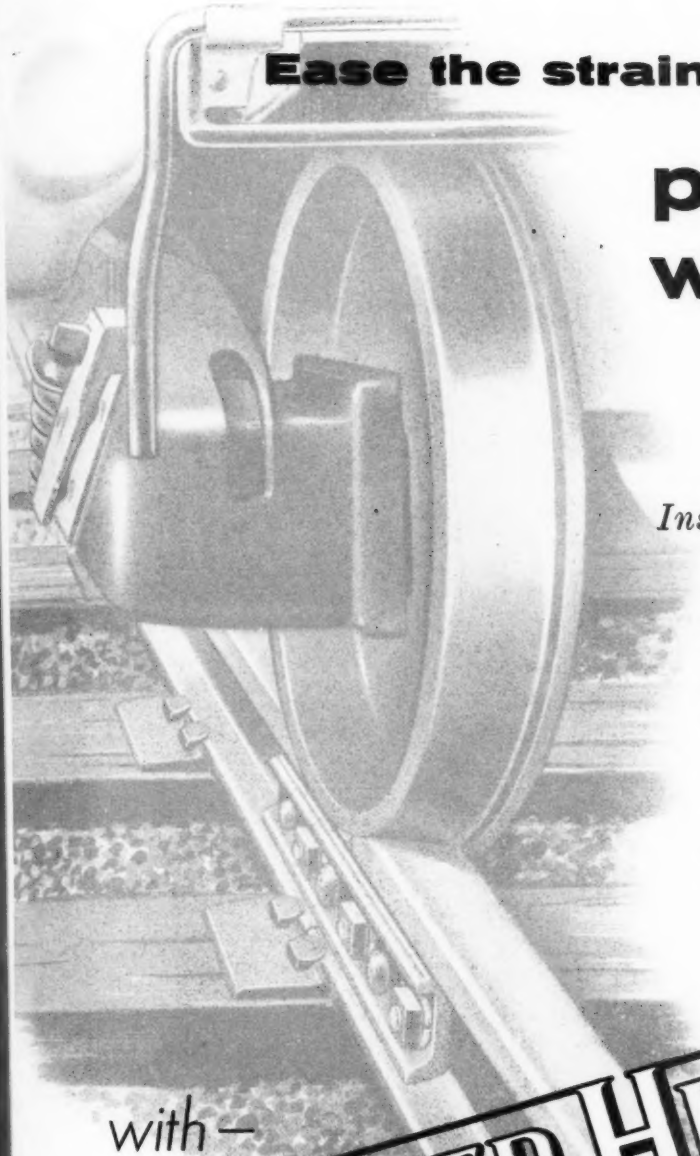

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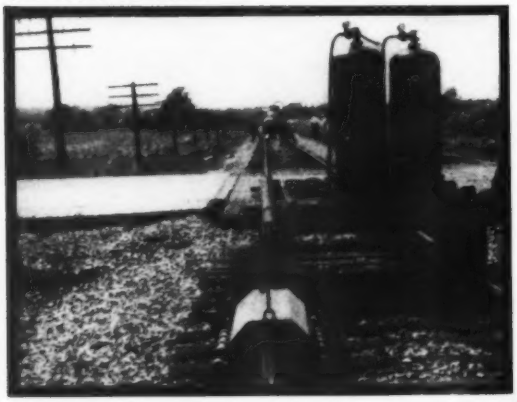

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New system "freezes" rail joints to give you the maintenance savings of continuous track plus the adaptability of jointed track

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